Design Foundations **for Systems Capital**

Griffith UNIVERSITY
Queensland, Australia
Yunus Centre

HATCHED

“Learn how to see.

Realise that
everything connects
to everything else.”

- Leonardo da Vinci

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Dear reader,

What would it look like to design an investment approach with the primary purpose of fostering systems innovation and transformation?

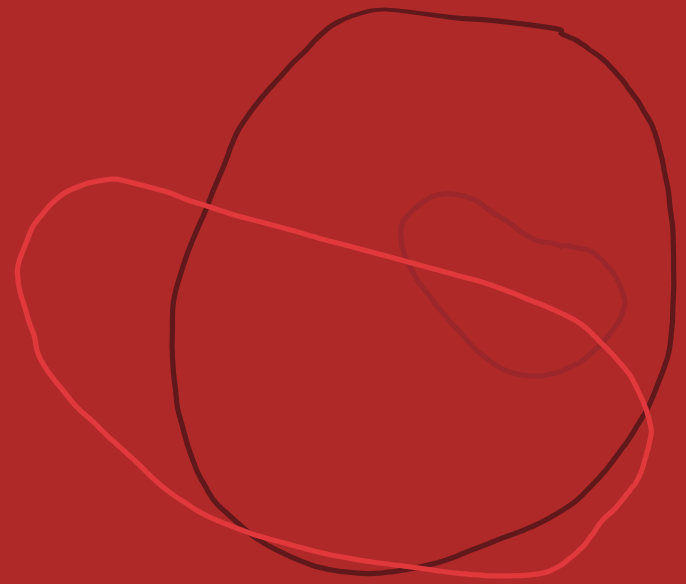
In this provocation, we reimagine how capital allocation could be better attuned to the interconnected nature of the world around us, and the systems which determine our quality of life and sustain all living things.

Currently, despite the wealth of financial flows, too few resources are accessible to actors and activities that have the potential to create positive, coherent, and enduring change.

At the heart of this work, we see financial capital as energy and infrastructure that enables and incentivises people to organise, act, and create – how we pool and deploy it is a matter in which we all have a stake.

In the following pages, we invite you to explore the concepts we're grappling with and the possibilities that have ignited our desire to make this contribution.

We welcome conversations and partnerships to progress this thinking into practice. We expand on these invitations in the final section.



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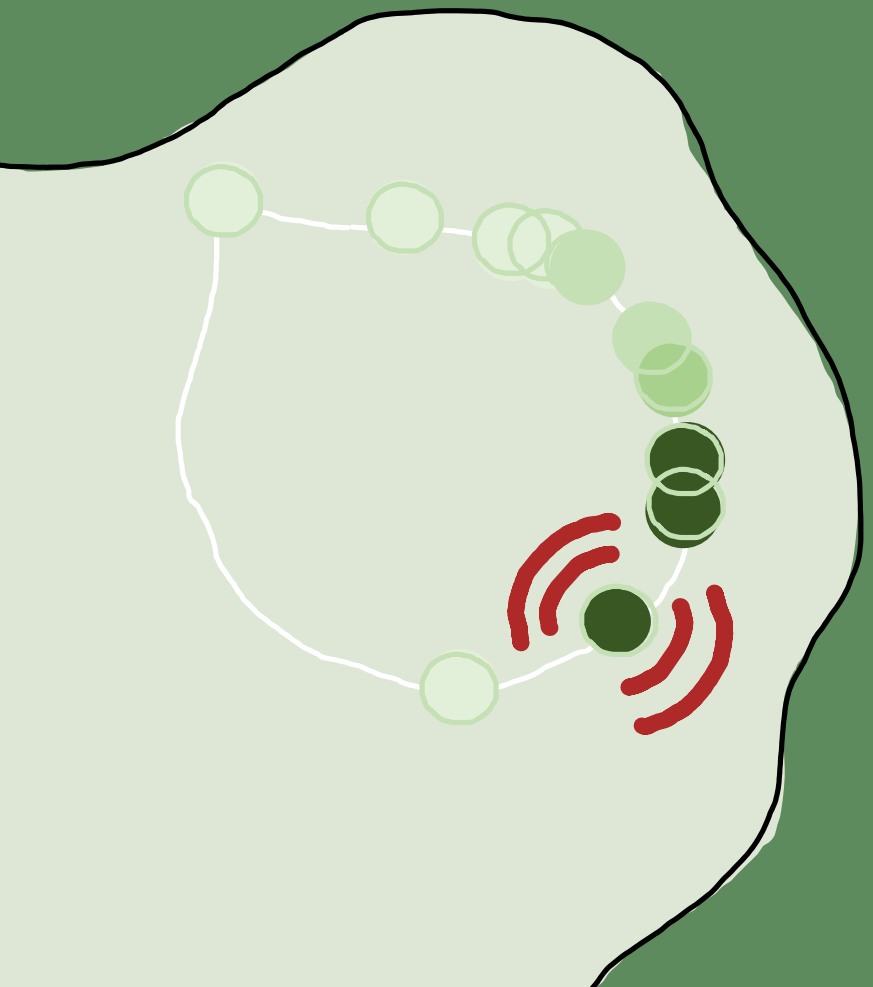
Topics covered,

1.

Setting the scene



In this chapter,

1.1 Introduction

The idea behind this work is both simple and challenging...

The simple part is the underpinning proposition.

→ That is, **the persistent and pressing challenges we face today are complex and systemic in nature**. This point is widely accepted and illustrated by the breadth of the Sustainable Development Goals (SDGs) and the obvious interdependence between them. It follows that **systems challenges require systemic responses**, and this should include how they are resourced. This is the basic case for systems capital - **if we're serious about systems change, our investment approaches need to match the intention and reality of that pursuit.**

The challenging part is twofold.

→ Firstly, working through **a systems lens** runs counter to much of what we're used to and **demands much re-examination of our assumptions**. It is certainly not an approach that lends itself to planning or optimisation.

Conceptualising systems is hard, fostering coherence between actors is hard, adapting to 'dancing landscapes' is hard, and that's before attempts are made to shift them.

This is why singular or one-dimensional solutions are routinely pursued and repeated, even when they're clearly ineffective. We trust in what we know and can more closely control.

→ Secondly, **it requires us not only to rethink the purpose of capital**, as we've done with 'impact investment', **but also the fundamental mechanics of how we allocate, manage, and govern it.**

Yes, capital markets are complex adaptive systems at a macro level, but investments are usually targeted towards individual deals or aggregated into 'financialised' products that are detached from real activities (increasingly without intrinsic value).

Portfolios will span asset classes to balance risk and reward, but rarely to harness real world interconnections and synergies. Finance, as we know it, excels in the efficient allocation of capital to maximise returns, but it has not been designed nor evolved to power interconnected action.

As a result, despite the growing calls for systems change, this difficult work is nearly always attempted with mindsets and investment approaches that are ill-equipped for the task and self-limiting in their potential.

However, if we are open to reimagining how financial capital could serve us better, we open a world of possibilities.

This exploration contributes to that reimagining.

“Ko te ohonga ake o taku moemoea, ko tērā te pūāwaitanga o te whakaaro”

–

“The awakening of our dreams, are the blossoming of our aspirations”

- Proverb from Te Puea Hērangi, of Waikato.

1.2 Context & purpose

Financial capital is a fundamental enabler of innovation and action, and a core societal infrastructure.

Open and liquid capital markets have been a primary building block of the modern, global economy, and provide the day-to-day currency of our individual and collective lives.

Now, as **it becomes increasingly clear that these economic systems need to be rewired to mitigate existential risks** to human well-being and the health of the planet, paradigms around the purpose and application of capital are also shifting.

Around the world, and in Australia, governments, financial institutions, businesses, non-profit entities, philanthropists, individuals, and communities, are experimenting with ways to access, structure, and blend finance to enable transitions and collective betterment.

These developments are promising, but not yet sufficient.

On current trajectories, the SDGs will not be realised by 2030 and, **despite some remarkable gains, too many essential indicators are tracking the wrong way** (UN, 2020; IPCC, 2022).

Too few resources are finding their way to actors and activities that have the potential to create positive impact, and those that do often fail to foster enduring and coherent change. So, beyond the need to increase the flow of resources towards creating better futures, there also needs to be new thinking in respect to how those resources are allocated, managed, and governed.

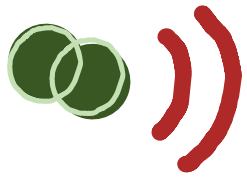
Indeed, while there is a growing realisation that complex challenges require 'systems of interventions and system innovation' (Johar, 2017), we are not yet investing with that mindset.

Yes, **we are seeing financial capital move towards impact goals, but the mechanics of allocation remain largely the same**, focused on generating 'pipelines', cherry-picking deals, and growing portfolios of 'single point solutions' (UNDP, 2021).

These approaches (whether they be commercial, public, or philanthropic in nature) are enabling many good things to happen, but they will not foster the trajectories and scale of change we need.
As a result, **we are missing opportunities to harness collective efforts** that exist across people, enterprises, projects, and institutions wanting to achieve common goals, and limiting our potential for transformation.

We have started to shift the intention of investment, but not yet the paradigm.

We need a fundamental and collective realisation that transactional approaches to capital allocation will not result in the sort of transformation that is needed to realise the SDGs and aspirations for better futures.



As we see it, this is the potential of systems capital approaches - to unlock the power of financial capital to foster systems innovation and change.

Accordingly, **we are looking beyond investment approaches that target individual activities**, regardless of their potential impact, **and are focused on ways to**:

- appraise systems for their transformational potential;
- design portfolios that harness interconnections and amplify positive value flows;
- establish fit-for-purpose governance and sensing mechanisms;
- and allocate and manage resources adaptively as change happens.

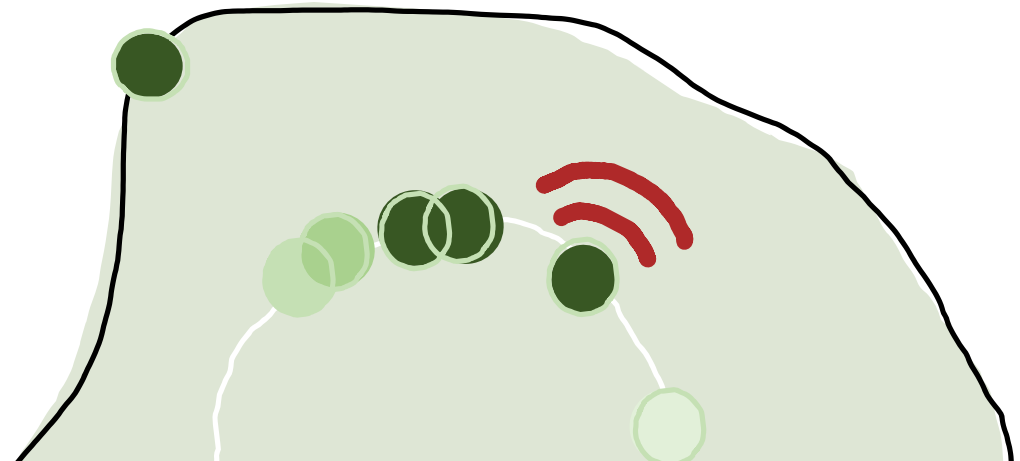
The purpose of this document is to explore the design foundations for such approaches.

While we have a strong belief that systems capital approaches are potentially transformative, we are also realistic about the practicalities and nature of the challenges to be addressed.

Pursuing these approaches won't make complexity less complex or guarantee outcomes. However, they do create the potential to reframe the fundamental mismatch between conventional investment approaches and the reality of what is required to shift systems and bring about real change.

"What we need now is a radically new approach to investing with the explicit aim of systems transformation – one that deploys capital with a broader intent and mindset; that is anchored in different methodologies, structures, capabilities, and decision-making frameworks; and that moves away from a project-by-project mentality."

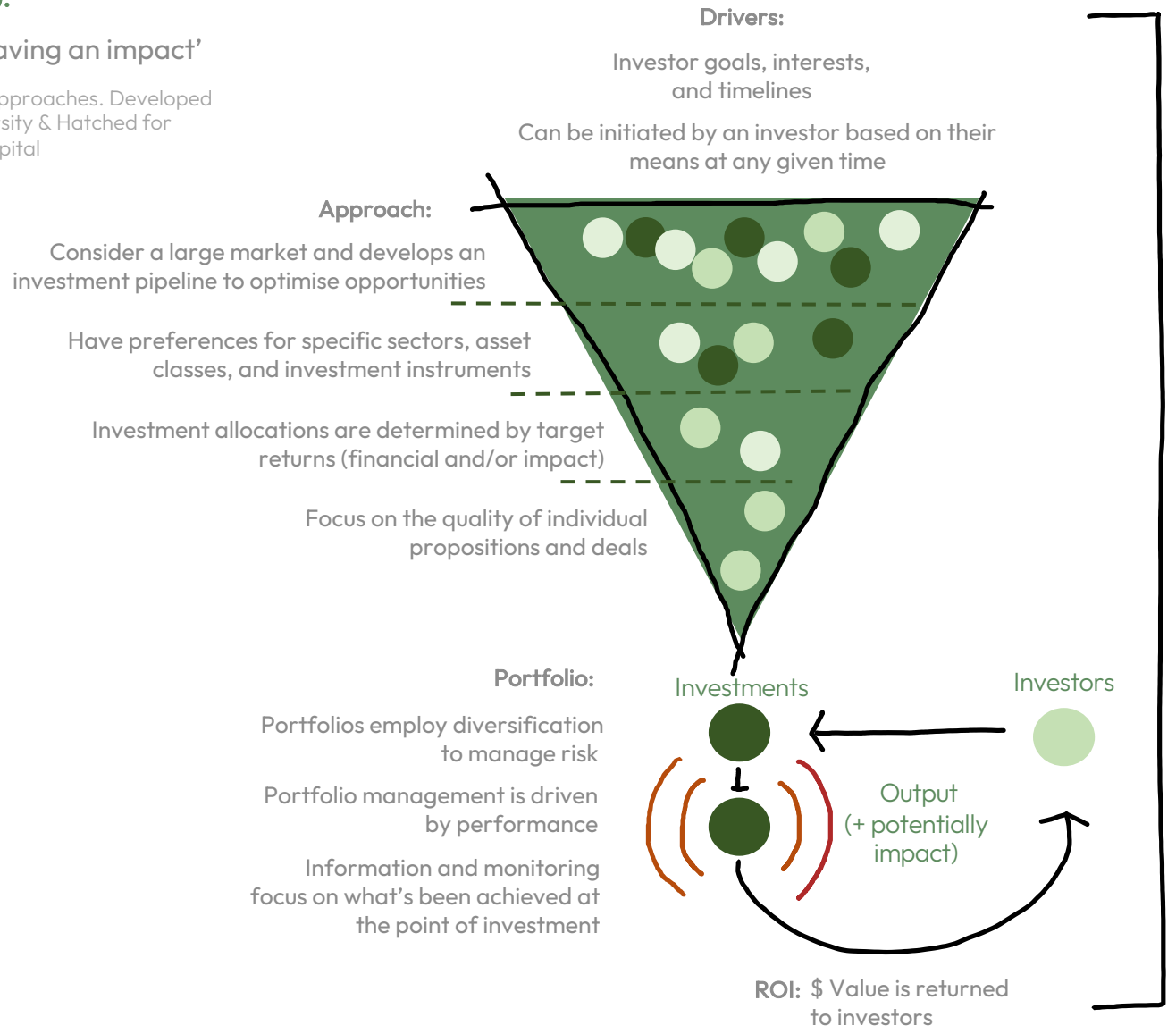
– Transformation Capital, Climate KIC, Hoffstetter, 2020

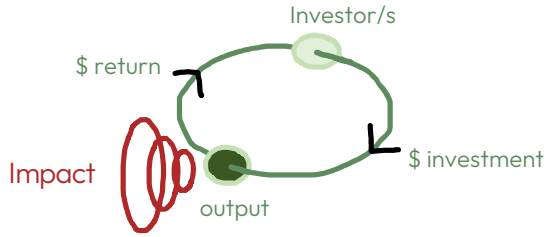


Conventional investment approaches
(including impact investing):

Intention: 'doing well' and 'having an impact'

Figure 1: Conventional investment approaches. Developed by The Yunus Centre Griffith University & Hatched for Design Foundations for Systems Capital





Efficiently allocating capital to serve investor interests and optimise returns

Systems capital approaches

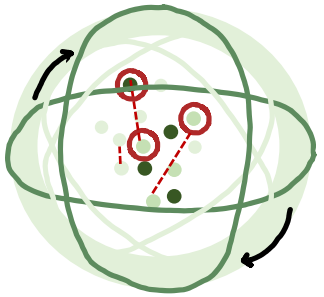
Intention: systems transformation

Figure 2: Systems capital approaches. Developed by The Yunus Centre Griffith University & Hatched for Design Foundations for Systems Capital

Drivers:

Collective, long-term, direction goals

Require degrees of cooperation and alignment between actors



Creating a flywheel that can stimulate, amplify, and sustain value towards directional goals

Approach:

Explore interconnections within a system to determine 'sensitive intervention points'

Allocate resources across and between actors, activities, and assets to stimulate and amplify value flows

Span sectors and embraces all asset classes and instruments to generate synergies and outcomes

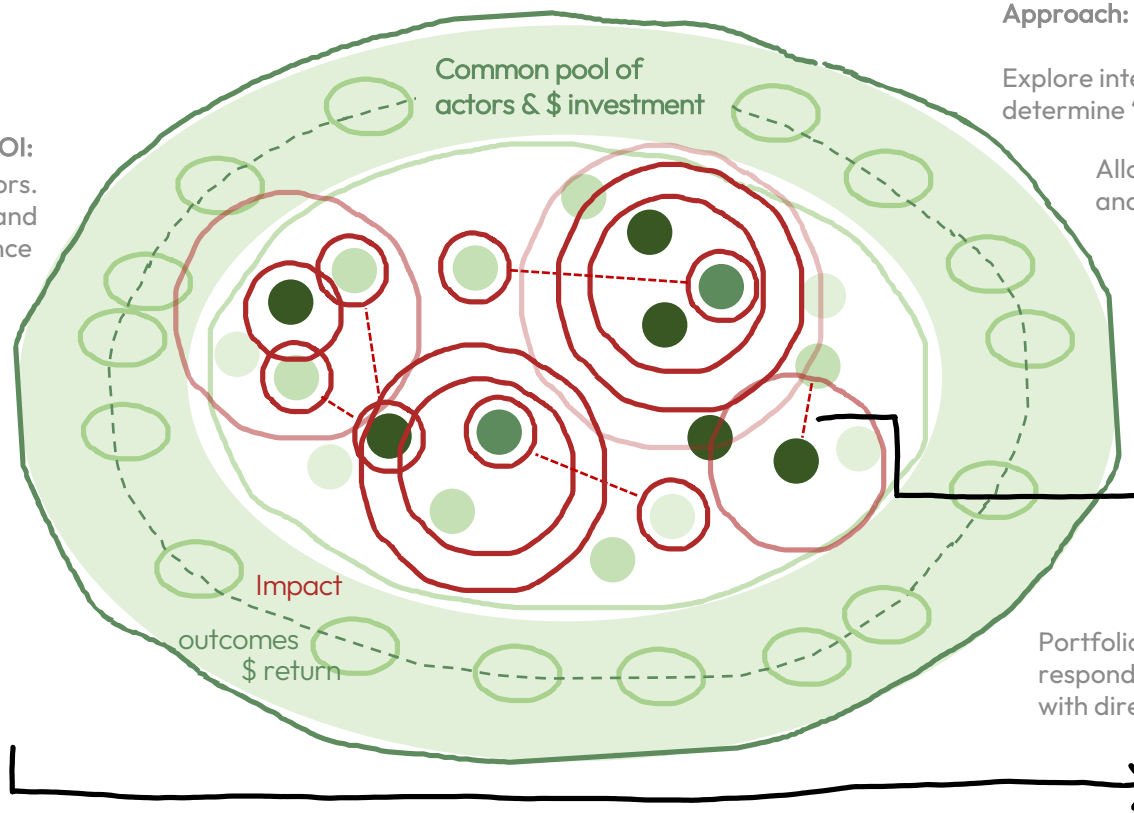
Investment allocations are determined by systems dynamics and transition pathways

ROI:

Value is returned to investors and contributing actors. Gains are reinvested to accelerate transitions, and distributed to increase systems health and resilience

Monitoring & Measurement:

Information and monitoring enable learning and help make sense of what's happening across the system



Portfolio:

Portfolios are reflective of micro systems and seek to maximise multipliers and spill-overs

Portfolios are adaptively managed to respond to emergence and retain alignment with directional goals

Governance: Governance is designed for coherence (between actors and activities) and to facilitate systems transitions

1.3 How to think about this work

While this work is anchored in related experience and practice, we offer it as a provocation and a hypothesis.

At this stage, **our thinking takes a general view of the principles, spaces, and pathways that can guide the design and implementation of systems capital approaches, which will need testing in specific contexts**.

Like much of our work, we are interested in exploring how regenerative and distributive futures could work in practice and the transitions that will be required to get us there.

With this in mind, we offer the 'Three Horizons' as a way of thinking about this work.

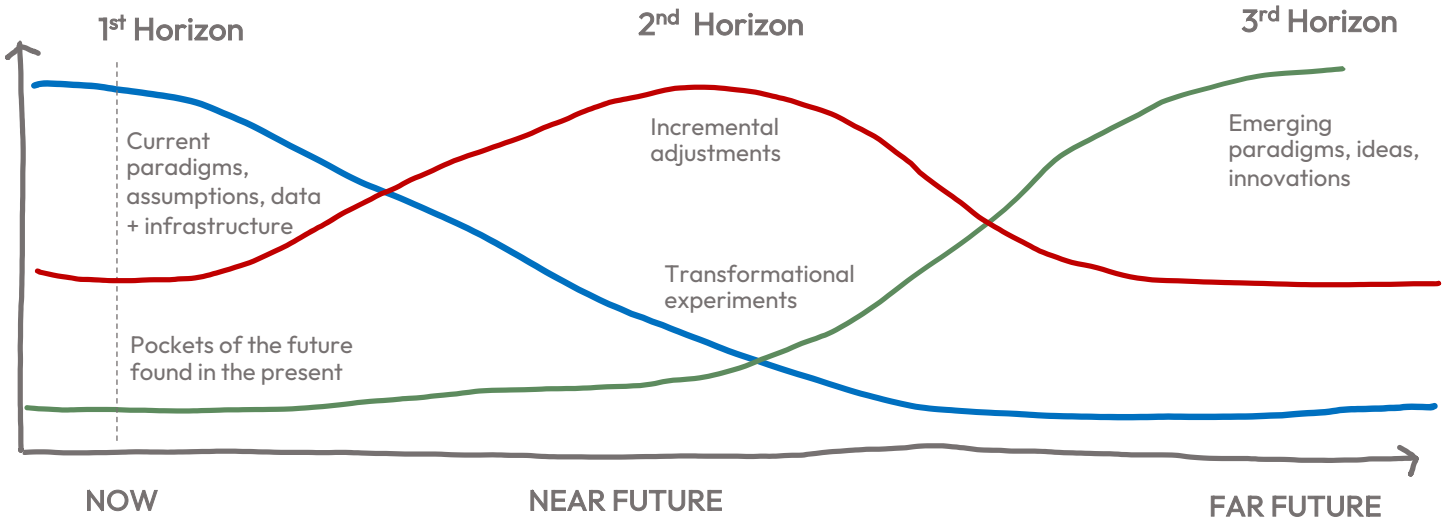
The Three Horizons framework is a 'way of working with change' (Sharpe, 2020) that helps make possible futures visible and highlights the mindsets, intentions, and actions that may be needed over time to bring about positive change.

By mapping this work on to the framework, we acknowledge that systems capital is a '3rd Horizon' concept - the ideas are largely speculative.

However, without such pictures we lack the means to shift paradigms and determine where and how we should experiment to evolve new thinking into practice. Imagination enables innovation.

We outline ideas for how we might progress experiments ('2nd Horizon' activities), with partners and through demonstration activities, in the final section.

The Three Horizons Framework



Source: Sharpe, Hodgson et al (2016).

1.4 Who is this for?

While this work may naturally attract the interest of practitioners and professionals in the field of impact investment, social finance, and philanthropy, we aim to convene a bigger table.

We encourage anyone interested in systems innovation to join the conversation, through whatever perspective or role that may be. This is important because systems capital approaches will involve much more than the technical aspects of investment.

We are also conscious that defined areas of expertise can be subject to unhelpful biases, path dependence issues, and power relations - and that this can be especially true when money is involved.

At the heart of this work, we see financial capital as energy and infrastructure that enables and incentivises people to organise, act, and create – how we pool and deploy it is a matter in which we all have an equal stake.

1.5. Acknowledging traditional wisdom and an emerging field

We have been working in and around impact finance for many years. This work has spanned market-building, capital raising, investment, and applied research. Consideration of systems has been present in much of this, particularly in relation to placed-based investment approaches, the potential for 'commons' financing, and how enabling ecosystems are designed and developed. However, this is our first exploration into a territory where the system-lens is primary and woven into all elements of an investment approach.

While there is a variety of language being used to explore similar ideas, we have adopted the framing of 'systems capital' because we have found it useful when thinking through the design principles and practicalities of harnessing all types of financial capital to address complex and common challenges.

In developing these ideas, we have drawn on our wider work in the field of systems and challenge-led innovation, and we acknowledge the influence and wisdom of Indigenous peoples from around the world who have long built social and economic systems around the principles of attunement, relationships, and balance. We also acknowledge the contemporary work that has provided the foundations of an emerging field and thank the following for their wayfinding:

Dark Matter Labs
Climate KIC
The TransCap Initiative
The innovation team at UNDP
The Connective
Catalyst 2030
The ROCKWOOL Foundation

We also note how quickly the core idea resonates with the people we've discussed it with - there's a sense of zeitgeist about it.

In his book 'Where good ideas come from', Steve Johnson discusses how new ideas often become 'available' in many places at the same time as a result of the layering of knowledge and contextual pressures. He calls them 'multiples' and asserts their potential to thrive is somewhat dependent on their access to collaborative networks. It seems that systems capital may be one of these ideas and we welcome collaboration.

2.

Framing the landscape

In this chapter,

2.1 Unpacking ‘systems change’ for this work

Before exploring design principles, spaces, and pathways for systems capital, we share some of the high-level perspectives we bring to this work in respect to ‘systems change’. In subsequent sections, we also provide some framing commentary on the attributes of capital we believe will be required for these approaches and highlight the potential role that new technologies can play in coordinating information and value flows in ways that have previously been too difficult or costly to countenance.

“Agents explore, react, and constantly change their actions and strategies in response to the outcomes they mutually create.

The resulting outcome [is] not mechanistic, static, timeless, and perfect, but organic, always creating itself, alive, and full of messy vitality.”

Arthur, Nature, 2021

2.2 Working with complexity

Complex systems are formed by diverse, interdependent, connected, and adapting entities, interacting in a network or space (Page, 2009). Using this framing, it is easy to recognise that most of the societal challenges we face, and contexts we act within, are complex systems.

Key characteristics of complex systems are their capacity for self-organisation and novelty - through interactions, fundamentally new properties and possibilities emerge. While we can manage our responses to and within complex systems, they are inherently dynamic and unpredictable. This makes planning mindsets and overly deterministic approaches to changing them not only redundant but potentially dangerous, as they embody an abstracted way of thinking about reality which is, quite simply, false. When engaging with complex systems, and therefore systems capital approaches, our mode of organising and acting needs to be based around cycles of 'probing, sensing, and adapting' (Snowden, 2021).

Another key property (and paradox) of complex systems is that they can be highly resilient and stable, but shift, sometimes unexpectedly, because of relatively small events and interventions. Systems thinking has explored the potential to harness these dynamics by leveraging 'sensitive intervention points' (SIPs) - targeted actions that can shift and accelerate change within a system when it reaches a state of 'criticality' (Farmer et al, 2019).

While the potential for discrete actions leading to outsized effects is compelling from a change-making perspective, we are cautious of over-simplifying this dynamic in practice. We certainly don't underestimate the timeframes, resources, commitment, and near continuous adjustment that will be required to cultivate the contexts and interdependencies where such shifts, or 'phase transitions', become possible.

Beyond targeted interventions to exert leverage, we are interested in the more modest idea of **'multiplying intervention points'** (MIPs) as a way of thinking about activities that, when resourced appropriately, can amplify synergies and positive value flows within a systems context. We think this perspective sits well within a complexity-informed approach as it highlights the fundamental importance of relationships between actors, entities, and activities. It is this concept that is at the heart of our inquiry: how may we understand, anticipate, and design for relationships in a systems context and deploy resources in ways that enable activities to take root, evolve, and thrive in concert?

This is a departure from conventional investment approaches that tend to allocate capital to specific activities based on their potential to create direct returns (impact, financial, or both), and not for their effect and influence across a system. In a systems capital paradigm 'externalities' (and the externalities of externalities) are observed with a holistic view of how interactions play out between actors and activities, and portfolios are designed to steer these spillovers and value flows towards directional goals.

2.3 Tangible & bounded contexts

For these initial explorations, we are concentrating on systems capital approaches in contexts that are bounded. We intend to focus on portfolios where the relationships between actors, activities, and assets are tangible and the effects of interventions and interactions can be monitored, learned from, and responded to. In real terms, we believe that value chains, place-based initiatives, purpose-led networks, and mission-oriented / challenge-led innovation approaches all provide the potential conditions for experimenting with systems capital.

This could look like fostering a placed-based transition to a zero-emissions economy, or a nested system within such a goal e.g., a focus on energy or food systems. While this provides a tangible context for action, it is clearly still complex and multi-dimensional - a net-zero transition will include material factors such as buildings, energy, manufacturing, land use, and mobility, and is also dependent on facilitative factors such as education, social capital, public advocacy, support for civic innovation, skills transitions, and the stimulation of new enterprise. Given current funding and financing arrangements for such pursuits are often ad-hoc and disaggregated, we are interested in designing investment portfolios that use the identification of 'MIPs' to weave complementary activities together.

Indeed, this is how we define 'portfolios' in a systems capital approach - a collection of interconnected actors, activities, and assets that are adaptively resourced, nurtured, and governed to foster systems transitions towards a directional goal. We explore the nuance of this concept next.

Some examples of bounded contexts where we see systems capital discussions and approaches taking shape, or having the potential to take shape, include:

Participatory Cities - an ambitious and holistic civic innovation platform in London.

Transition Towns - a movement of communities who are organising to reimagine and rebuild economies in place.

The TreesAI pilot in Glasgow - a demonstration project seeking to foster nature-based solutions and regenerative economies in a city context.

Kolektivo - a socio-technical platform for strengthening local economies and communities by creating complementary economic systems driven by wellbeing.

Moving Feast - a purpose-led network of actors operating as a generative value system based around food in Victoria, Australia.

Te Hiku Ecosystem - an emerging systems approach to integrated and intergenerational housing in Aotearoa New Zealand

Fostering a circular economy in central Queensland, through a transition in the aluminium industry – a challenge-led innovation opportunity for industrial transition and impact

2.4 ‘Systems-level portfolios’ and ‘investment portfolios’

In these explorations, we layer the idea of portfolios.

Firstly, we use ‘portfolio’ to refer to a group of interconnected activities, actors, and assets consistent with how we use ‘portfolio’ in our challenge-led innovation work. These portfolios are organised by a natural coherence (be it be thematic, sectoral, structural, or their relevance to each other in other ways) and often represent nested systems within an intervention context. For example, housing, clean energy, and/or economic inclusion portfolios could form part of a placed-based transition to a regenerative economy.

They overlap, like lily pads, and several of these portfolios are likely to be involved in any given systems capital approach (see *Visualising systems capital*). Here, we refer to them as systems-level portfolios.

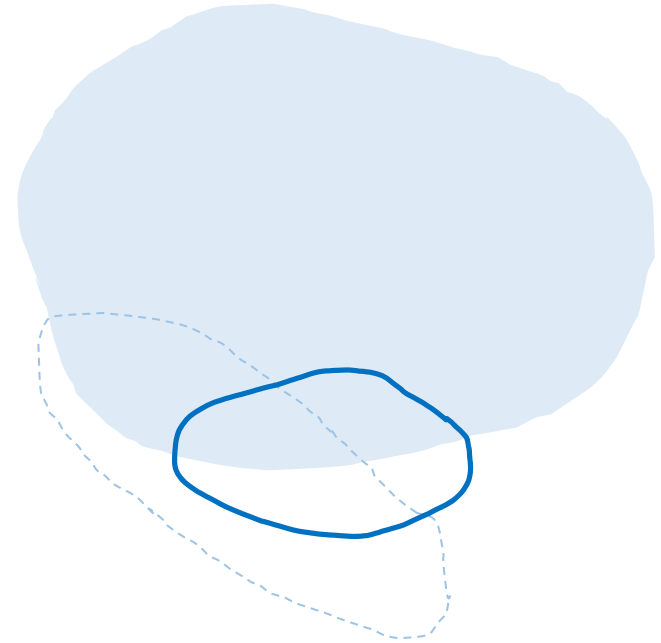
We also use ‘portfolio’ in a more traditional investment sense, albeit in an evolved way. That is, the mechanism through which a collection of investments are made, managed, and governed, and the practical means to engage with and stimulate value flows at the systems-level. We refer to these as investment portfolios.

While the investment portfolio represents a point of direct intervention, substantive progress towards transition goals is only likely to occur as a result of wider actions and interactions within and across systems-level portfolios. These will inevitably extend beyond the direct reach of an investment portfolio, no matter how large.

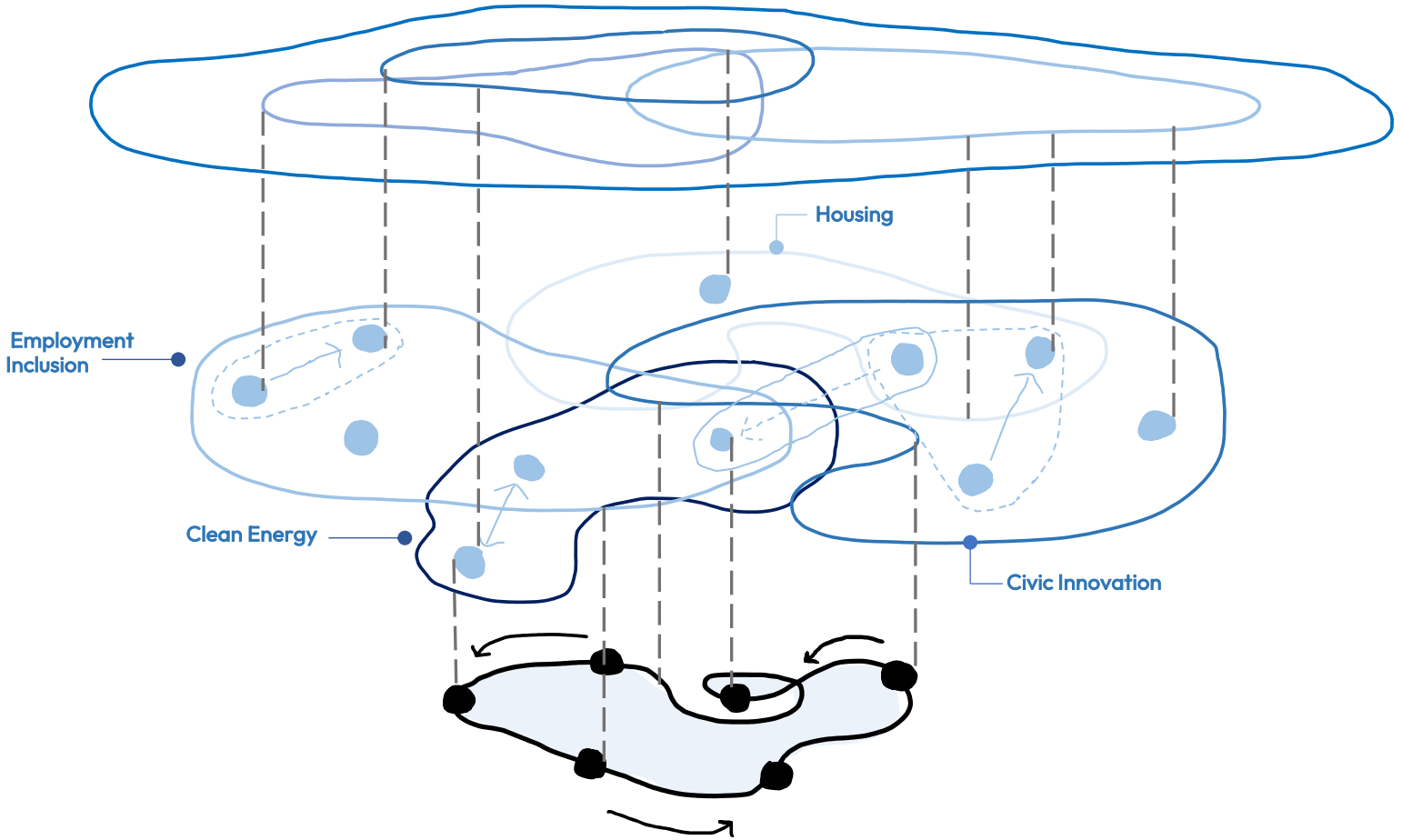
The objective of a systems capital approach, therefore, is to use its investment portfolio as a flywheel - deploying a discrete set of resource allocations to anticipate, stimulate, influence, amplify, and sustain larger and more diverse value flows at the systems-level. This creates implications for engagement, design, information flows, coherence, and governance, which we attempt to explore later.

As this work evolves, we anticipate the concept of investment portfolios becoming increasingly nuanced and blurred. For example, we see the potential for multiple sources of capital being coherently allocated across ‘systems-level portfolios’ (by multiple actors) without the need for structured or centralised investment vehicles. However, this will require evolved models of cooperation and networked governance and would still likely include the notion of investment portfolios, even if this is at the level of individual actors.

For now, we simply highlight the distinction between these layers of action, intervention, and influence.



Layering portfolios in context



- Intervention Context
- Systems level portfolios
- Investment portfolio

Figure 3: Layering portfolios in context. Developed by the Yunus Centre Griffith University & Hatched for Design Foundations for Systems Capital

2.5 A systemic approach to implementation

In implementation, systems capital approaches will require a range of capabilities, practices, and processes that go beyond allocating and managing financial capital. Indeed, in exploring these design spaces and pathways we've often asked ourselves whether we were describing a systems investment approach or a systems innovation approach that has a resourcing component. They are likely one and the same.

As a result, the investment activities we describe are embedded in a broader set of actions that include: systems mapping, sense-making, multiple types of appraisal, stakeholder engagement, design of tailored governance arrangements, establishment of sensing and measurement mechanisms, adaptive coordination and management, communications, and broader contributions to the development of the field. **Systemic innovations require systemic approaches.**

We also argue that all these activities need to be underpinned by distinct mindsets and principles.

2.6 Towards regenerative futures

Our last high-level perspective for this work centres on the opportunity to look beyond the immediacy of 'addressing challenges' and 'creating solutions'. While these objectives are clearly an important part of the proposition, we are also interested in the potential for deeper shifts where the aim is not to ameliorate problems within current systems, but to think how resourcing could work in systems that are fundamentally better - **systems that foster 'the flourishing of all living things for all time'** (Pawlyn and Ichioka, 2022).

History teaches us that shifts of great magnitude are not only possible, but to some extent inevitable. Our provocation therefore invites exploration of how radical change could result from intentional reform. In this sense, we unashamedly position systems capital as a progressive agenda. Again, we acknowledge the wisdom of Indigenous peoples from around the world in influencing this view, with ideas such as the 'Seventh Generation Principle', and align with more recent framings such as the RSA's articulation of a regenerative mindset:

"one that sees the world as built around reciprocal and co-evolutionary relationships, where humans, other living beings and ecosystems rely on one another for health, and shape (and are shaped by) their connections with one another." (Warden, RSA, 2021).

2.7 Framing 'capital' for this work

In addition to the different mindsets, practices, and processes involved in a systems capital approach, there are fundamental questions about the capital that will be required to make these approaches work, including where it can be sourced and/or generated.

In looking at the attributes of capital that will likely be required, we believe any given portfolio will need access to a core pool and/or source of resources that:

- Can be flexibly allocated across a range of different activities and systems level portfolios.
- Can be allocated through a full range of instruments, and combinations of instruments, based on need, opportunity, and context.
- Is tolerant to a range of commercial return profiles (including zero for some allocations) and timeframes.
- Assesses risk and reward of any individual allocation in relation to the potential effects at the systems-level.
- Can be adaptively managed based on the performance of the whole portfolio and dynamics within (and across) systems-level portfolios.
- May be subject to distributed and networked governance arrangements.
- May be subordinated to leverage other resources.
- Will ultimately prioritise systems transitions over any one investment, activity, or interest.

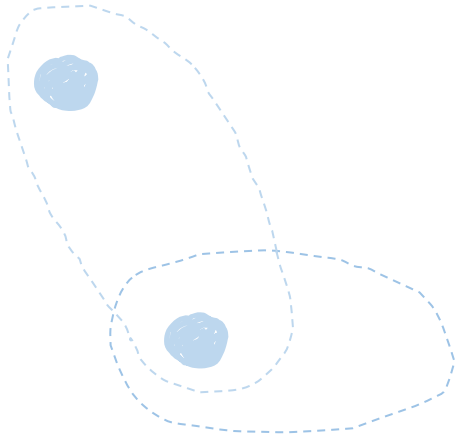
In summary, we need capital that can be intentionally directed towards underpinning transformation and fundamentally shifting outcomes without getting caught up in hard targets, mythical returns, or measurement for the sake of management.

An assumption we make, as we start these explorations, is that the effectiveness of any given systems capital approach will be directly correlated to the flexibility of its capital.

If we're right, this has major implications for how capital is sourced and/or generated. This point is paramount given that conventional investment approaches centre investor preferences, regardless of whether they are commercial, impact-led, philanthropic, or, perhaps even, public.

Systems capital requires that we flip the supply-centric orientation of allocation, management, and governance on its head to be in service of what is required to shift a system towards directional goals. This proposition is conceptually and practically challenging, and opens rich areas of exploration, debate, and design.

One approach is to build on 'blending' or 'layering' approaches that have become common in impact investment. Simplistically, this entails attracting a group of investors who have aligned goals and are able to supply different forms of capital (with different expectations of returns) to enable an allocation of resources to hybrid activities or across a range of commercial and non-commercial activities.



“Society will need to have a conversation about the purpose of money in the 21st century.

Shall monetary wealth continue to be a source of power, status, and self-worth, or shall it return to a more basic function as a facilitator of sustainable and prosperous societies?”

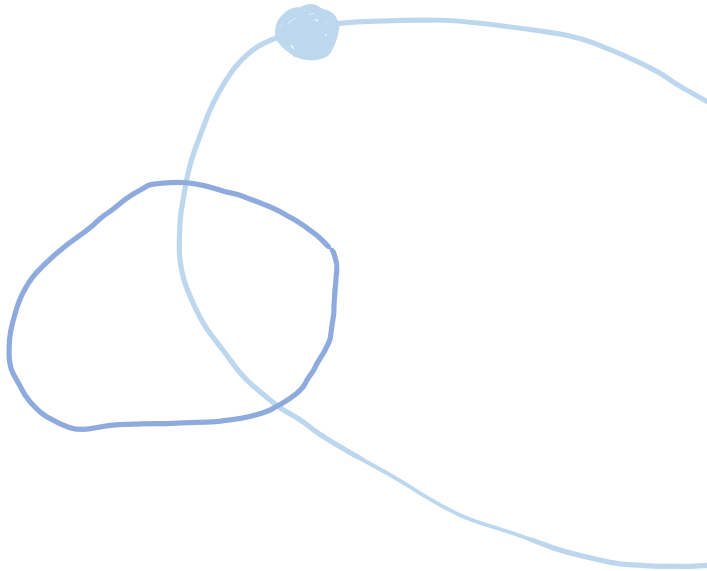
- Transformation Capital, Climate KIC, Hoffstetter, 2020

However, while this could work with a set of relatively stable relationships, we are sceptical that it would work in more dynamic contexts. We believe mismatches between the (blended) capital supply and the emergent demands of the investment portfolio would be inevitable, and sourcing additional capital to plug gaps would create delays in allocation, disconnects between supported activities, and a potential breakdown in the intended systems dynamics.

We also suspect that even if the supply and demand profiles were well matched, managing the governance requirements and expectations of multiple investors could derail a coherent and adaptive management approach. On this point, we were interested to note a recent study of 40 philanthropists from 16 countries (who had made contributions totalling over USD$500 million) found that appetite for 'systems change work' was rare and 'wanting to maintain control' was high (Co-Impact, 2021). We cite this to emphasise that even if impact-first capital can be secured to balance out the reward expectations of commercial funds, it doesn't automatically follow that this capital will be any more flexible in terms of its allocation.

Another option could be to establish a special purpose fund, where investors interested in the potential of systems capital are willing to make endowments and/or take long-term positions on flexible, and potentially unspecified, terms. These would effectively become 'commons funds', where progressive investors largely forgo their own interests and commit to the pursuit of commons outcomes, as defined by the design of any given systems capital approach. Finding such investors seems challenging now, but that may change as urgency around key issues grows, mindsets shift, and the appetite for experimentation increases. While on the demand side of outcomes, rather than the supply of capital, it is interesting to note the recent launch of initiatives such as Frontier - a US$925m advance market commitment for permanent carbon removal, primarily to be funded by technology companies. Such developments may boost confidence for bolder investment approaches.

Of course, governments have a mandate for systemic approaches (using taxation to pool commons resources for common good), but don't necessarily have the capabilities and/or mechanisms to undertake or devolve resources to facilitate the approaches we're proposing. However, we believe there is considerable opportunity for public sector innovation in this domain. This could include targeted levies to circulate capital in specific contexts, such as ring-fenced land taxes to fund place-based investments in infrastructure (Hickey, 2022). We also note that monetary and fiscal responses to the COVID pandemic may change precedents in respect to how liquidity is deployed to address other societal risks in the future. This proposition is elegantly explored through the establishment of the 'Carbon Coin' in Kim Stanley Robinson's 'Ministry for the Future', which in turn is based on Chen's work on the 'risk cost of carbon' (Chen et al., 2019).



We are also encouraged by work investigating how existing instruments can be adapted to capitalise systems-based approaches. Dark Matter Labs are exploring the use of 'smart perpetual bonds' (SPB) to finance the development of commons assets capable of generating recurring future value, such as forestry generating revenues through carbon sequestration and other nature-based services (Dark Matter Labs, 2021). SPBs replace the need for substantial short and medium-term repayments on capital with a perpetual, but small, fixed payment. This creates a flexible pool of capital and long-term time horizon to work with. The pricing of these contracts can be further calibrated, with pre-agreed variables, through smart contracts that are transparent, dynamic, and cost efficient.

While the timescales for these arrangements are incredibly long-term, it potentially makes them a good fit for insurance and pension funds which are increasingly interested in the determinants of stability, wealth, and well-being in the face of complex and chaotic realities. We are also interested in the recent work proposed by Ethical Fields, who have been convening conversations around the establishment of place-based impact funds, which are mutualised across regions, to provide both macro-level scale and local-level flexibility to resource community wealth building approaches and activities, which are inherently systemic in nature.

A more novel option for liquidity comes from the emergence of web3 technologies and 'tokenomics'. While this area is relatively unproven (at least for our purposes), it offers the potential to combine capital flows with tailored information flows ('programmable money'), smart contracts, targeted incentives, network effects, and distributed governance arrangements. A powerful combination that has the potential to be highly enabling of systems capital approaches. We explore this further in the next section.

We believe there are many more options available to source and/or generate systems capital and suggest that conventional investment approaches are enhanced by systems capital approaches when they are layered and leveraged appropriately. Indeed, we propose the design of any given systems capital approach should seek to build on and crowd-in other resources and investors (be it with more singular interests) to grow the momentum behind the intended systems transitions.

2.8 Harnessing technology

“The reason big new things sneak by incumbents is that the next big thing always starts out being dismissed as a toy.”

- Chris Dixon, 2010

Beyond sourcing and/or generating capital that allows for flexible allocation, this work also poses challenges around information flows, coordination, governance, and how different types of value can be made visible and accounted for in coherent and efficient ways.

All of these are non-trivial demands in themselves, and potentially prohibitive when stacked. Web3, often reductively understood as blockchain and cryptocurrencies, is an emerging field of general-purpose technologies that have the potential to help manage these challenges; arguably, in ways that are transformational.

At an essential level, web3 is best understood as a new societal infrastructure.

It provides people with novel ways of organising, decentralised governance, smart contracts with composable rules and functionality, permissionless transactions, transparency, security, scalability, bespoke forms of currency and liquidity, and the creation of tailored incentive systems and market mechanisms.

We believe that if this technology is deployed in context and combined with sound design, engagement, and governance, it could be a game-changer for systems innovation.

In the same way that earlier versions of the internet transformed how people were able to access, create, and share information, web3 could fundamentally change how people are enabled to create, exchange, and distribute value and authority.

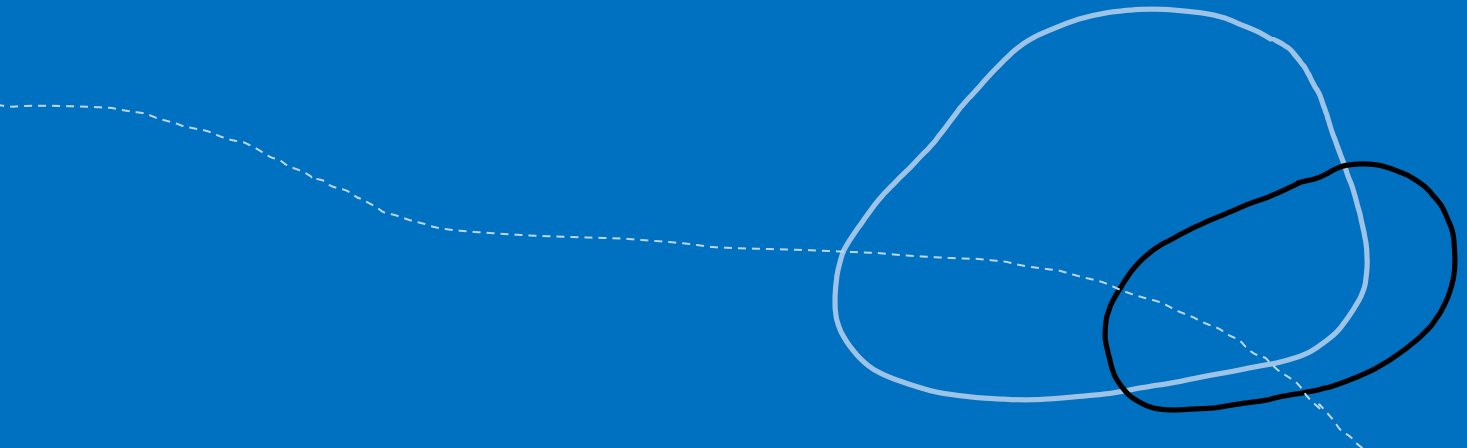
Over the last few years, there has been a proliferation of web3-enabled initiatives which provide insights into the potential of these technologies for systems capital. While many of these initiatives are inherently experimental, we are interested in the patterns and directions they signal. We profile a few examples.

“[web3] allows for the most rapid iteration on new economic and governance models of any system humans have built.”

- Packy McCormick, 2022

“Technology is neither good nor bad; nor is it neutral.”

- Kranzberg, 1986



KlimaDAO has pooled capital through a decentralised governance structure to purchase and drive up the price of carbon. Only launched in late 2021, its treasury held more than 17m tonnes of 'on-chain' CO2 by April 2022. For comparison, New Zealand emitted 33.48m tonnes in 2020 (Our World in Data, 2022).

There is significant experimentation with mechanisms that employ non-fungible tokens (NFTs) to enable environmental regeneration. Here, the creation and purchase of NFTs mapped onto specific landscapes provides funds for conservation, restoration, and enhancement activities. This can lead to improved environmental outcomes (e.g., through carbon sequestration, biodiversity, improved water quality, etc.) and economic value creation (realised through corresponding market mechanisms). This appreciates the value of the underpinning token and creates a reinforcing loop by aligning the health of an ecosystem with economic value (also see Open Forest Protocol and Regen Network).

There are hybrid programs where local digital currencies are being created to resource impact-based business models and interact with a city's tax system. In Catalonia, initiatives are trialling platforms that enable democratic decision making and other forms of civic participation.

There are ambitious experiments around the provision of universal basic incomes. There are new service providers like Pool and Vana who are enabling groups and networks to secure their data and monetise it through 'data unions' and cooperatives. A whole technology ecosystem for regenerative finance ('ReFi') is emerging. The list goes on and evolves every day.

Clearly, these developments also create risks, especially in respect to unintended consequences and how new vulnerabilities may be exposed and exploited. The field is also subject to hype cycles, scams, and misunderstanding, and we recognise that the technologies themselves can be difficult to comprehend, navigate, and use. There will inevitably be booms, busts, and failures as rapid experimentation and speculation plays out.

However, these are not reasons to avoid the technologies and the socio-technical transitions they are facilitating, especially as they become increasingly interwoven with other general-purpose technologies in fields such as AI, sensing and measurement, manufacturing, biology, and energy; all of which are also developing at exponential rates (Azhar, 2021).

Rather, it emphasises the importance of exploring their potential and improving our understanding of how they can be shaped and harnessed for collective betterment. Indeed, we strongly believe it is vital that the 'impact sector' embraces these technologies, as it is only when they are combined with social, public, and civic innovations that they offer truly transformational potential.

On this basis, we will be front footed in appraising the potential of web3 and other technologies in our thinking around systems capital approaches and experimenting with them in practice.

2.9 Visualising systems capital

Imagine a place-based transition to a more regenerative economy.

Here, we consider 4 x systems-level portfolios:

- Housing
- Civic Innovation
- Clean Energy
- Economic Inclusion

There are many potential activities, actors, and assets that might be included in each portfolio, and some of them will show-up in multiple portfolios.

The various activities and assets will require a combination of investments and supports to them get going. If this is done in concert, they have the potential to contribute to each others' development and amplify value flows within and across the portfolios.

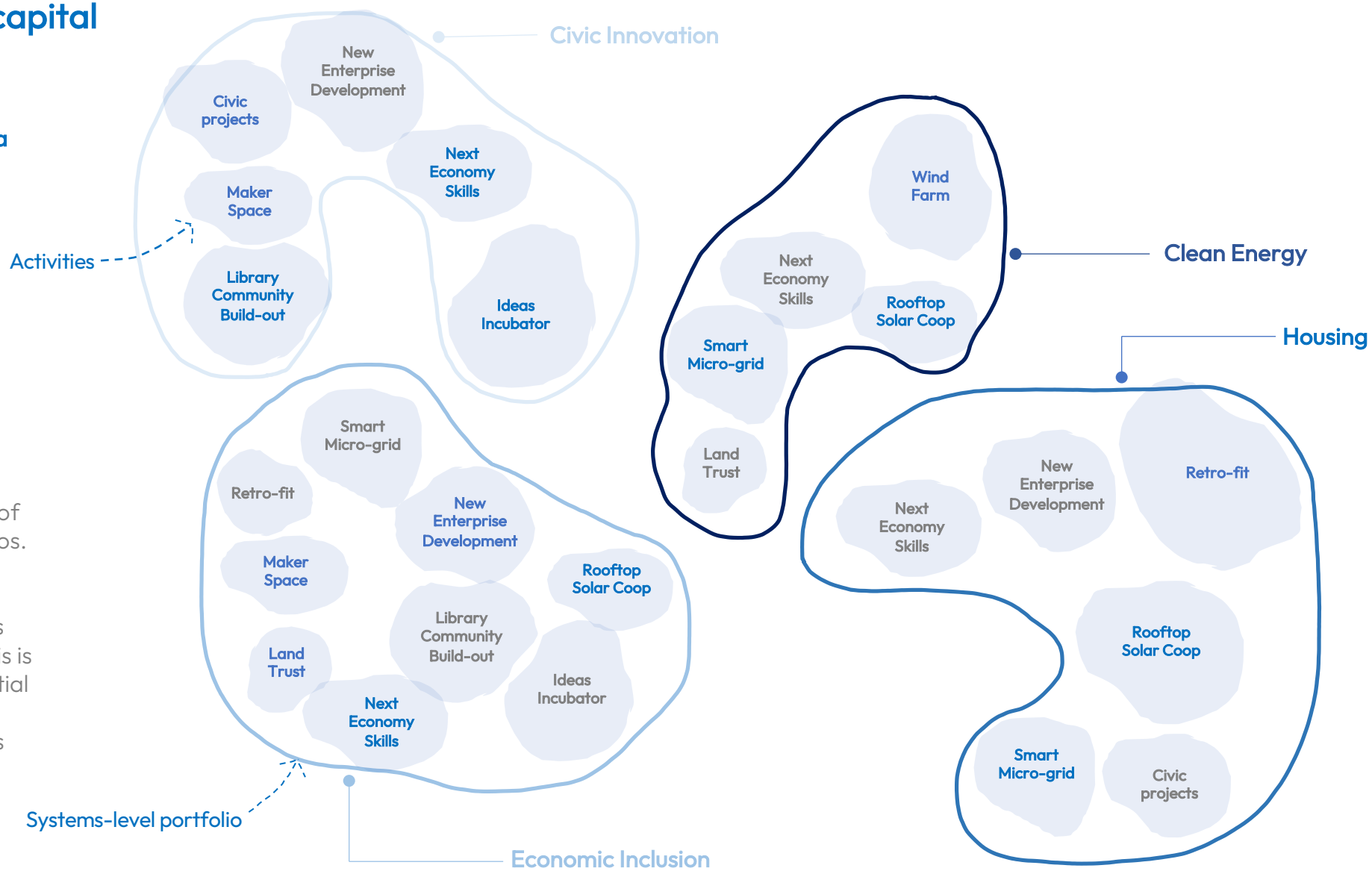


Figure 4: Visualising systems capital Pt.1. Developed by the Yunus Centre Griffith University & Hatched for Design Foundations for Systems Capital

For example:

- The Library Community Buy-out provides the platform for the Ideas Incubator & Maker Space.
- The Ideas Incubator germinates several new activities: Next Economy Skills program, Rooftop Solar Coop, and other New Enterprise Development.
- The develop of Next Economy Skills provides workers for the new Wind Farm, Rooftop Solar Coop, Smart Microgrid, and Housing Retro-fits.
- These activities contribute to economic inclusion through new employment opportunities, lower energy costs, and increased participation in the development of the local economy.

Or...

- The newly created Land Trust leases land to enable the establishment of the Wind Farm, Microgrid batteries, and provides potential for other land-based New Enterprise Development and Civic Projects.
- The Microgrid distributes and aggregates power generated locally through the Wind Farm and Rooftop Solar. All of these require Next Economy Skills.
- Locally owned assets (Land Trust, Microgrid, Rooftop Solar Coop) generate dividends to maintain civic spaces (Library, Maker Space), invest in New Enterprise Development, and fund new Civic Projects and other activities germinated through the Ideas Incubator.

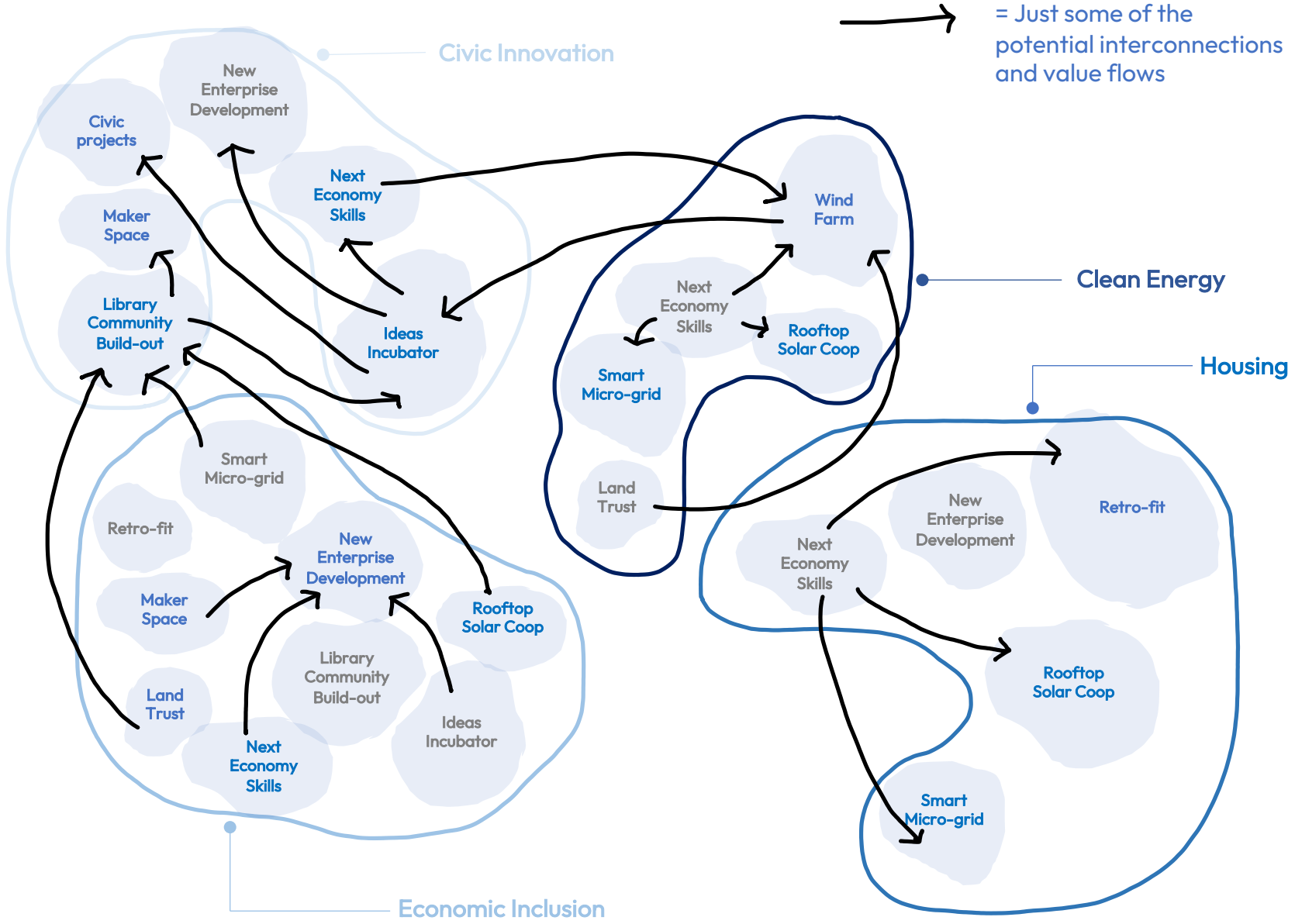


Figure 5: Visualising systems capital Pt.2. Developed by the Yunus Centre Griffith University & Hatched for Design Foundations for Systems Capital

The objective of an investment portfolio, therefore, is to create a flywheel – to deploy a considered and discrete set of resource allocations that can anticipate, stimulate, influence, amplify, and sustain larger and more diverse value flows within and across the systems-level portfolios.

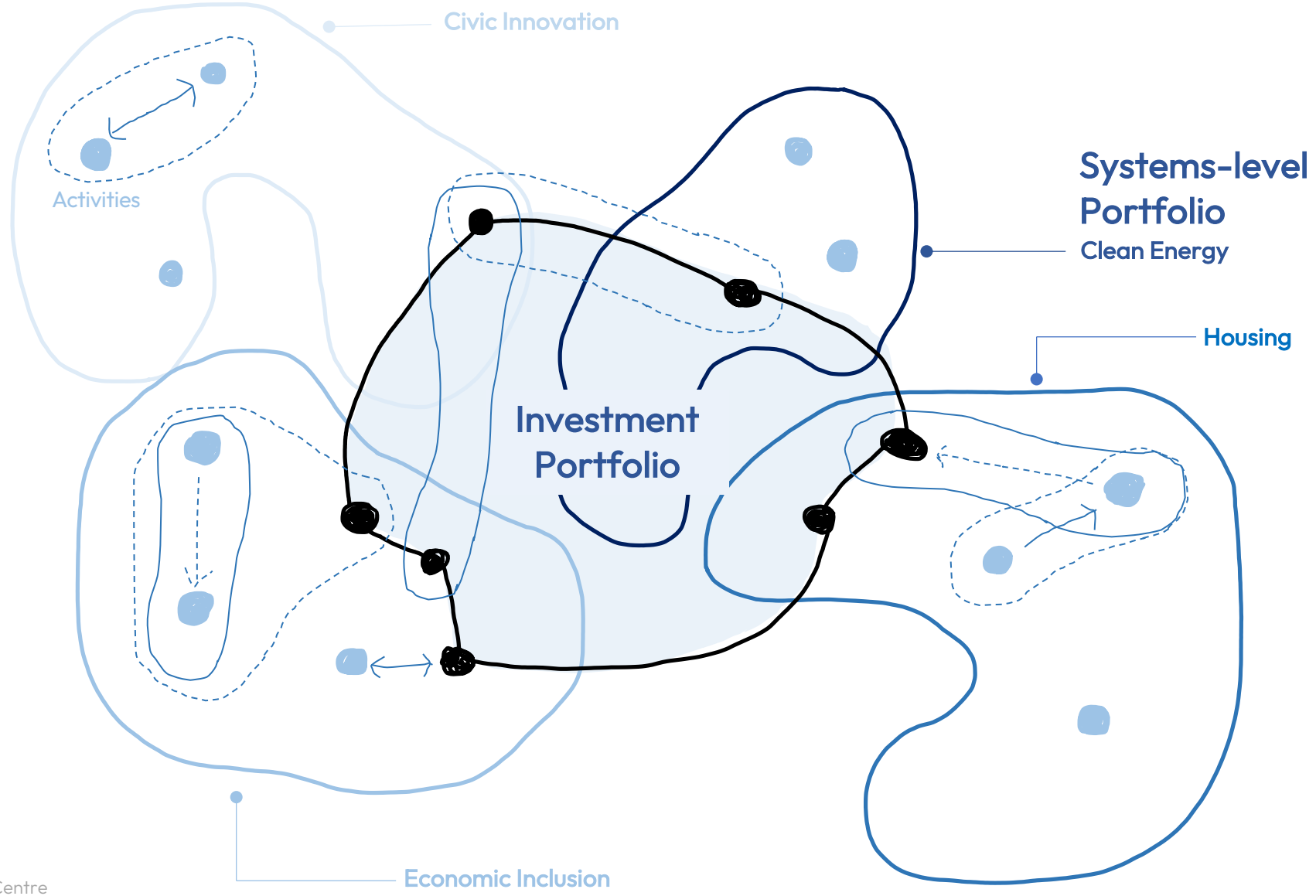
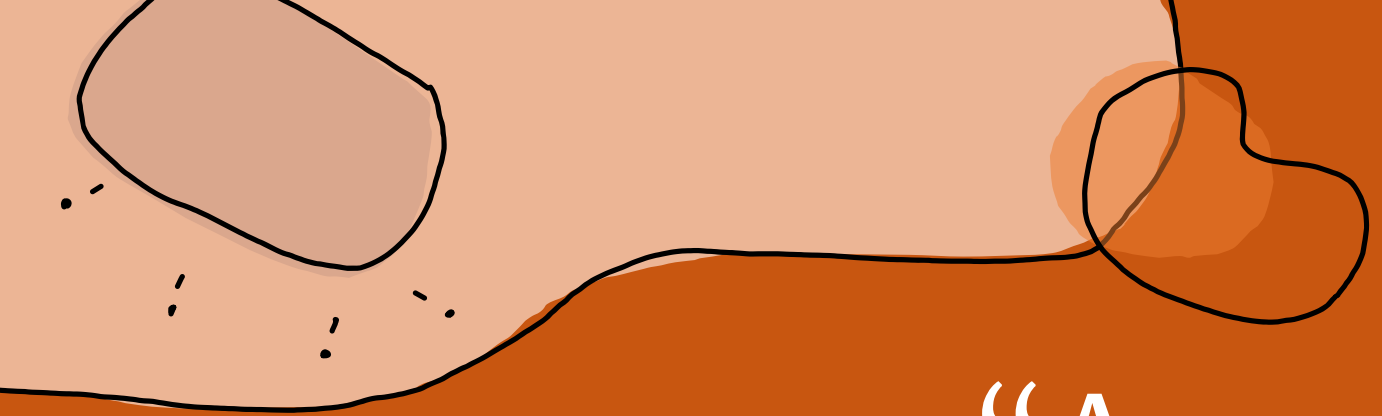


Figure 6: Visualising systems capital Pt.3. Developed by the Yunus Centre Griffith University & Hatched for Design Foundations for Systems Capital

3.

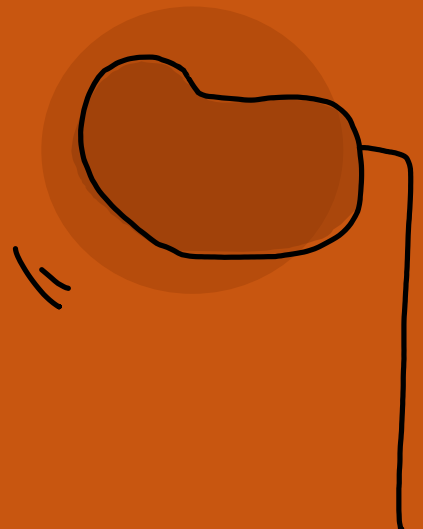
Design principles, spaces and pathways

In this chapter,



“An actor in a system controls almost nothing, but influences nearly everything”

- Understanding Complexity, Page, 2009



3.1 Four stages of exploration and design

As discussed, the design foundations we propose here are speculative - they represent a general hypothesis of what we believe should be considered, probed, and worked through to develop and implement a systems capital approach. It's a starting point that we will evolve through testing and learning from others engaged in similar work.

We emphasise that this is *by no means* intended to be a step-by-step guide - our intent is to provide *an orientation not a blueprint.*

As a result, we frame many of the design spaces around questions to be asked (and assumptions to be examined) rather than tasks to be undertaken.

The design principles, spaces, and pathways are explored through four stages:

1. Orienting principles and mindsets
2. Exploring the potential for a systems capital approach
3. Developing the infrastructure for a systems capital approach
4. Implementing a systems capital approach

We also propose potential areas for engaged research and discovery in each of the design spaces.

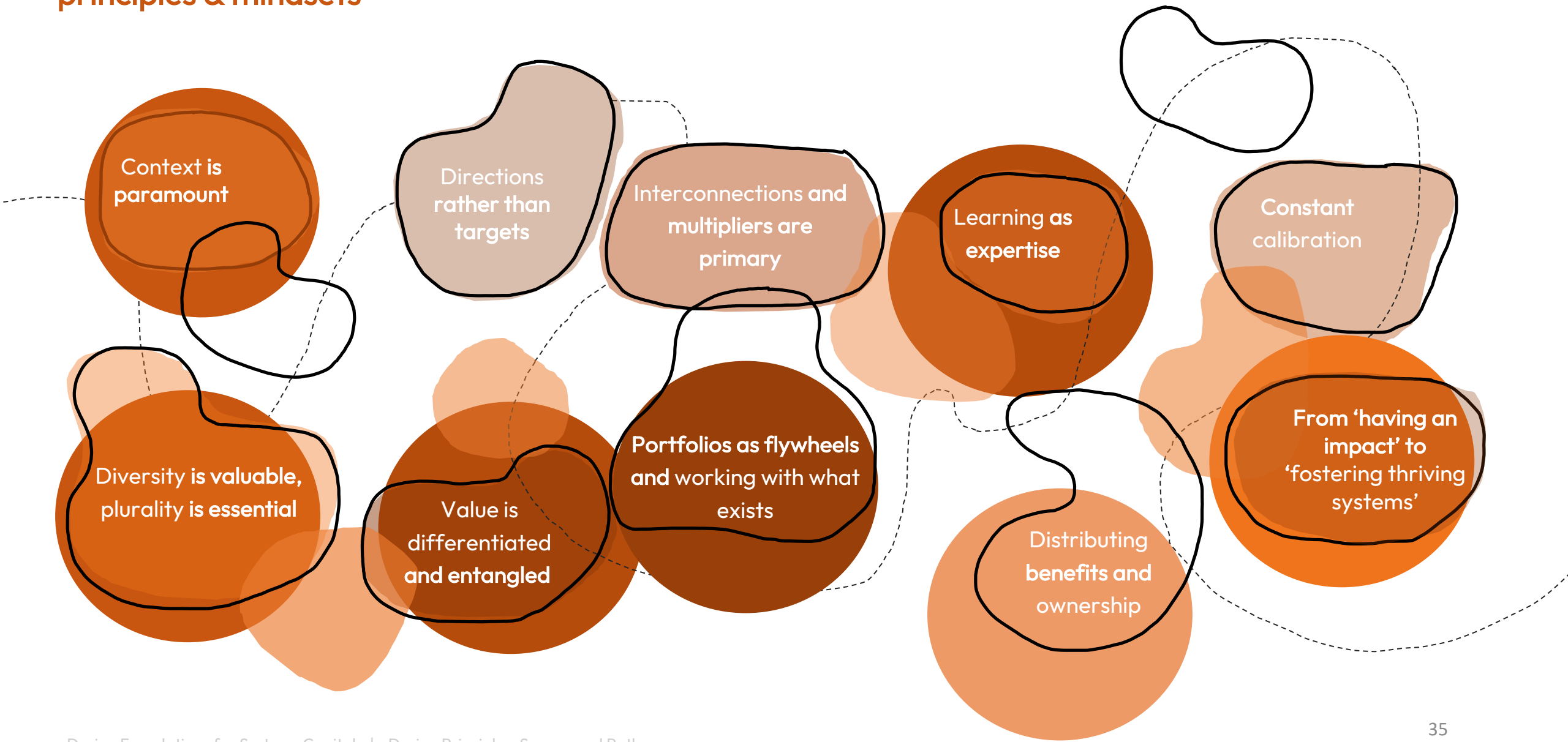
Reminder on: 'systems-level portfolios' vs. 'investment portfolios'

Currently, we layer the idea of 'portfolios':

1. **'Systems-level portfolios'** refer to groups of interconnected activities, assets, and actors. They are where change plays out and will extend beyond the control of any one investment portfolio.

2. **'Investment portfolios'** refer to a collection of activities and assets that are resourced and adaptively managed to stimulate and sustain value flows at the systems-level. In any given system capital approach, an investment portfolio will likely weave together activities, assets, and relationships across multiple systems-level portfolios.

3.2 Orienting **principles & mindsets**



Overview

Donella Meadows asserted that the primary lever for systems change is the ability to transcend existing paradigms, this is followed by the nature of the mindsets around which new systems arise (Meadows, 1999).

The capacities to reframe, reimagine, and reshape are key ingredients for transformation. In the context of systems capital approaches, we propose a set of principles and mindsets that can help guide design and anchor practice. These principles overlap and emphasise different points.

Context is paramount

The goals, design, allocation approach, and governance of any given systems capital approach need to be grounded in context - the place, culture, assets, circumstances, history, people, relationships, opportunities, structures, constraints, and patterns within which any intervention is nested.

While much may be transferable between different approaches and portfolios in terms of orientation and insights, we suggest more structured notions of replication and scale should be held lightly.

Directions rather than targets

Systems capital approaches embrace working with complexity and will foster unexpected developments and outcomes. While targets are helpful in describing the nature and extent of the outcomes we are aiming for, they are problematic if they override what emerges through action.

When engaging in systems innovation and change, goals are positioned as directional and held as orientations rather than fixed destinations. Accordingly, our ambitions will need to adapt to the 'dancing landscapes' (Page, 2009) we engage with and evolve over time.

> "Realize that NO paradigm is 'true', that everyone, including the one that sweetly shapes your own worldview, is a tremendously limited understanding... If no paradigm is right, you can choose whatever one will help to achieve your purpose."
>
> - Meadows, 1999.

Interconnections and multipliers are primary

The core idea of a systems capital approach is that resources are deployed to facilitate intentional systems change. All investments (or allocations) should serve that end with portfolios designed to harness interconnections and synergies between activities - what exists and can be strengthened and what could be created.

Through this approach, the aim is to stimulate, steer, and amplify value flows that create real change in complex contexts towards directional goals. Investment preferences in respect to sectors, asset classes, investment instruments, terms, timelines, and even returns are, therefore, subordinated to serve this primary and holistic intent (albeit within the bounds of what is feasible). This runs somewhat counter to modern portfolio theory which centres investor interests and often diversifies investments (in response to uncertainty) to manage risk and maximise returns.

Learning as expertise

Designing and managing systems capital approaches across diverse activities and asset classes is best navigated through cycles of probing, sense-making, and adapting, rather than a reliance on specific methods and areas of expertise.

While expertise remains important, it needs to be responsive to context, not imposed on it. Indeed, deep expertise and success in a particular field may engender assumptions and biases that limit learning and possibilities.

System capital approaches will likely span multiple boundaries, disciplines, activities, and cultures, and create new 'in between' spaces. Being open and attuned to the nuances of these dynamics will be a vital part of being able to navigate them. The capacities to learn and unlearn will be critical.

This also invites different notions of 'expertise'. Given the importance of context in systems change, lived experience of issues, place, and an understanding of the relationships, politics, and culture that surround any potential transition should be elevated to sit alongside technical and professional capabilities.

Constant calibration

As we have discussed, complex systems behave in ways that are non-deterministic and cannot be reliably controlled. This means the allocation and management of resources in a systems capital approach will require constant calibration and adaptation to stay aligned with intended directions. In turn, this has a range of implications for governance and how we capture and interpret information.

In respect to governance, portfolios will require arrangements that enable both agility and coherence. This means we need to think carefully about where authority sits and the potential benefits and implications of delegated and decentralised decision-making.

In respect to information flows, sensing mechanisms that capture a broad range of signals are as important as the more typical performance (and impact) management frameworks. This is because we want to gain and monitor a fuller picture of how change is happening across the portfolio context, even when it isn't directly related to progress against intended trajectories.

This broader set of signals can help reveal patterns and dynamics within systems and bring emerging risks and opportunities to light. Sensing mechanisms can act like our own sensory capacities - providing rich pictures in real time, enabling both anticipation and navigation.

Furthermore, making this information transparent across portfolio activities and partners can enhance collective sense-making, coherence, the transfer of learning, and may reduce the risk of unintended consequences.

Diversity is valuable, plurality is essential

Good design, management, and governance of a systems capital approach will be dependent on the quality of relationships with and between key actors within the systems context, and these actors will likely have diverse views, interests, and capacities.

When this diversity is facilitated and woven together well it generates valuable insights and enhances the collective capacity to make sense of complexity and solve problems (Syed, 2020). However, doing this work well is non-trivial and requires shifting mindsets beyond principles of inclusion, where diverse perspectives are invited into a set space; to plurality, where spaces are genuinely shared.

This principle should also extend to how individual investments are shaped, negotiated, and structured. Investment terms that are co-created and enabling of actors - reflecting their world views and circumstances - are more likely to see them succeed and contribute to value flows across the portfolio. Accordingly, and somewhat counterintuitively, radical flexibility in investment approaches and arrangements may reduce friction and help foster greater overall coherence.

Value is differentiated and entangled

The interconnections between activities in a system portfolio will be multifaceted and often nuanced. While it is relatively easy to monitor the flows of financial value, other forms of value and their effects can be harder to appraise and capture.

This can lead to some value flows, and their determinant activities, being overlooked and underappreciated, even when they play an important role in creating the conditions for more tangible returns and outcomes to be generated (such as the subtle role social capital plays in attracting and retaining talent in a city, community, or organisation).

The failure to recognise these interdependencies and account for different forms of value is perhaps one of the main reasons our prevailing economic systems are breaking down (in a crowded and complex world, externalities are external to what, exactly…?)

While impact investment has started to account for blended value creation from specific activities, it still struggles to harness and account for blended and interconnected flows of value within and across a system.

A systems capital approach seeks to understand these entangled flows, and to resource activities that create different forms of value based on their holistic influence and effect.

In this sense, notions of ‘impact-first’ and ‘finance-first’ investment are somewhat redundant through a systems capital lens; all allocations are appraised on their relationships to each other, their potential to stimulate value flows, and their contribution to transitions.

Portfolios as flywheels and working with what exists

The investment strategy of a systems capital approach need not incorporate all possible activities, assets, and actors within the intervention context. Rather, it should prioritise the nodes and interconnections which have the greatest potential to stimulate value flows and drive transitions.

At the heart of a portfolio there should be a relatively simple set of activities that can help create a flywheel. In determining where to start an investment portfolio, consideration should be given to what already exists and has momentum.

Centring these activities, capacities, and leadership is important for any number of reasons, not least those relating to autonomy, ownership, and legitimacy. It is also a practical base to build from.

Working with what exists enables closer exploration of dynamics within the intervention context and may help surface adjacent opportunities and latent synergies, providing promising options for subsequent activation and investment.

Building on existing momentum can also build confidence and generate new energy, with visibility of progress creating feedback loops and ripples that may influence civic action, social norms, and other shifts in sentiment and mindsets. If value and progress can be demonstrated, these knock-on effects will likely (although not always) be congruent with the intended transitions.

Distributing ownership and benefits

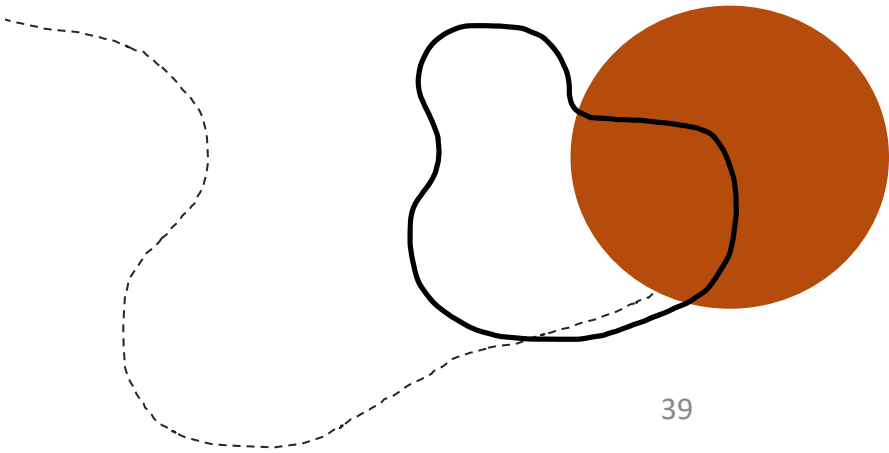
Beyond maintaining good relationships and information flows with and between actors, a systems capital approach should also seek to distribute benefits and ownership in ways that increase the sustainability of the change it seeks to facilitate. How this is done should be determined by context, albeit with the assumption that greater participation in the upside of any given transition can help align interests and foster cooperation.

Participation should include more than financial benefits and may take an expansive view of 'stakeholders'. For example, it may consider distributions to past and future stakeholders and be open to ideas as to who and what has a 'stake'. In Aotearoa New Zealand, the Whanganui River has been given the legal status of a person; how might innovations such as this play out in the context of distributing and reinvesting value from a portfolio that generates revenues from landscape regeneration? Should a river get to advocate for its rights and interests? How might choose to invest its resources?

Portfolio design should also consider how privately accruing value generated through 'commons' investments is fairly treated. Dark Matter Labs show how public investment in the New York High Line led to significant and asymmetric wealth creation for adjacent property owners, which arguably the wider public should have had share in (Dark Matter Labs, 2019).

This is not to say that there shouldn't be private wealth generation resulting from systems capital approaches, as this can be an important part of creating incentives and sustaining value flows. However, there should also be consideration of how value generated through portfolio allocations and activities is proportionately distributed to all contributing actors.

Ultimately, the purpose of distributing benefits and ownership is to increase the resilience and sustainability of intended transitions, and potentially enabling external investors and supporters of any given system capital approach to be biodegradable.



From ‘having an impact’ to ‘fostering thriving systems’

In recent years, the framing of ‘impact’ has become synonymous with creating positive change. In a systems capital approach, we argue for a shift in emphasis from ‘having an impact’ to ‘growing thriving systems’, where ‘thriving’ is anchored in the well-being of people, places, and the planet, and the balance between them.

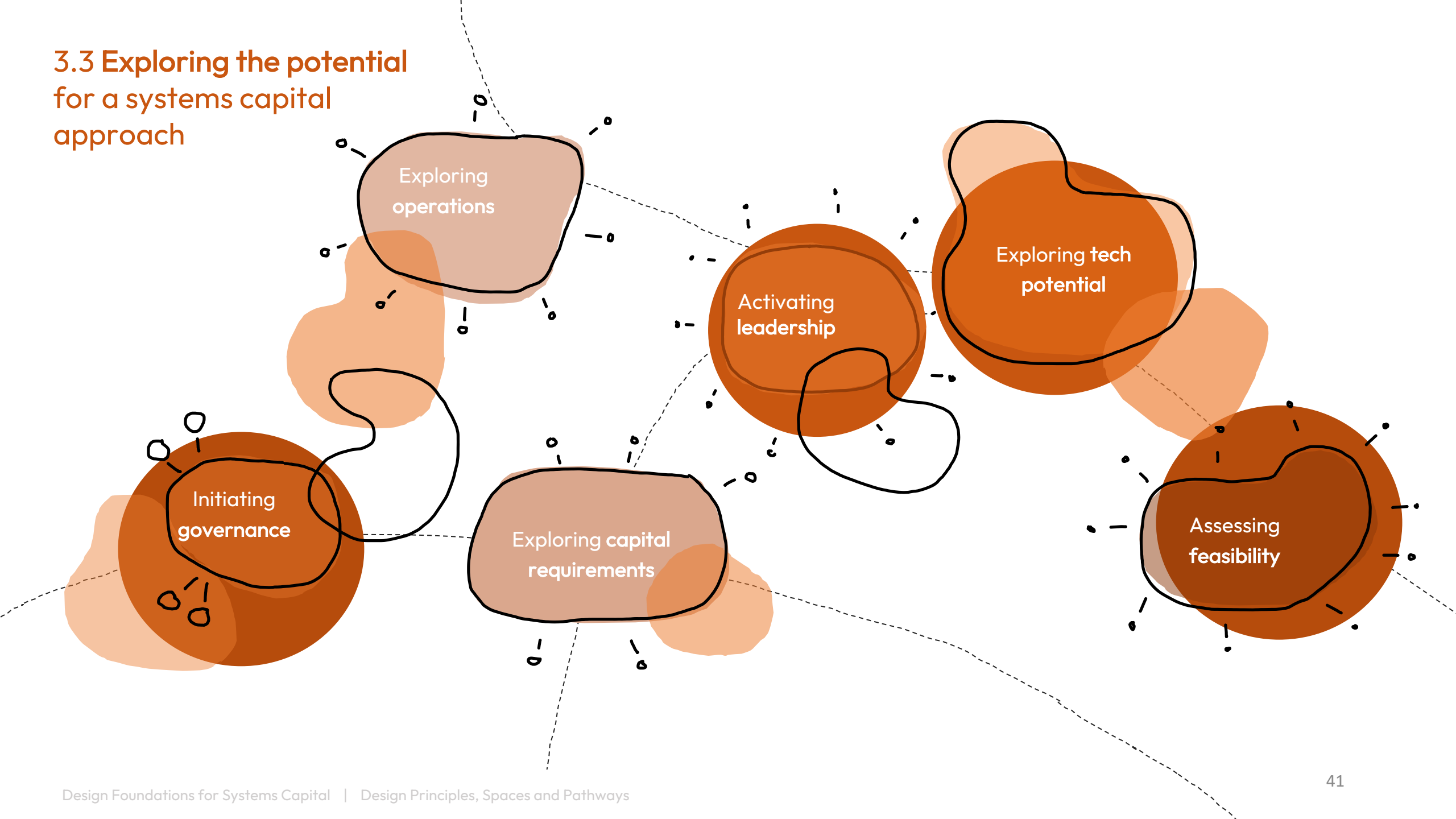
Beyond solving problems and generating better outcomes, this stresses the importance of cultivating the conditions to **connect and sustain** them.

We recognise that in complex systems, good outcomes can be temporary and will result from the interplay of multiple factors that can be hard to fully ascertain, let alone replicate.

Regardless of the goals or context, we think that success in a systems capital approach will ultimately be less about ‘scalable solutions’ and more about facilitating the infrastructures, conditions, and relationships whereby ‘thriving’ becomes more likely and resilient.

In short, we argue for a mindset shift from ‘fixing problems’ and/or ‘saving the (*fill in the blank…*)’ to something more akin to gardening.

3.3 Exploring the potential for a systems capital approach



Activating leadership

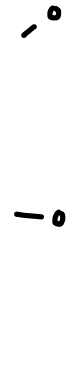
A precondition of a systems capital approach (SCA) is there being a core group of activators who are committed to leading and anchoring the exploration and development phases, and potentially providing stewardship into implementation.

These activators could be individuals, groups, organisations, or institutions, and could consider:

- Their capacity (time, resources, and capabilities) to undertake at least the initial exploration and scoping.
- Their legitimacy to undertake the development of a SCA in the intended context.
- The authorising environment and fundamental constraints that exist within the intended context.
- Being explicit about their respective assumptions, interests, mindsets, and values.
- How will they organise, work together, and make decisions (inception governance).
- Actors that should be engaged and brought into the core group at an early stage. For reasons including capability, resourcing, legitimacy, credibility, influence.

Areas for engaged research and discovery:

- What conditions and attributes are more likely to make activators successful in the initial shaping of an SCA?



Exploring capital

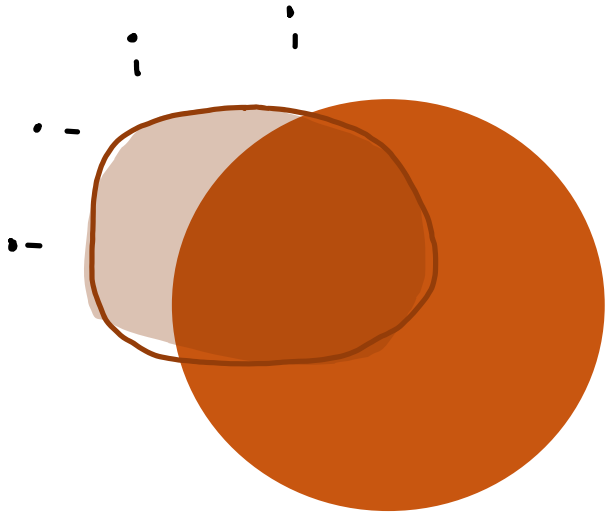
SCAs require capital pools and/or flows where the attributes and scale of available capital are comparable to the ambition of the goals and the likely scope of action.

Based on initial explorations and sense-making, the activators of any given SCA could consider:

- Relative to the intervention context and the nature of the likely systems-level portfolios, what might an initial investment portfolio of activities and assets include?
- What type and amount of capital would these activities and assets likely require? What might their return profiles and time horizons look like?
- What potential capital sources, investor profiles, and/or mechanisms could fit this demand profile? What precedents exist that might be drawn on?
- What other forms of funding and finance might be leveraged to complement core investment portfolio resources?
- How might initial ideas around sourcing capital be tested and evolved?

Areas for engaged research and discovery:

- What sources of capital and investor profiles offer a good fit for SCA intervention contexts?



Initiating governance

Any given SCA will require initial governance arrangements that provide legitimacy, coherence, and coordination during the exploration phase.

These governance arrangements are about creating the foundations for a potential SCA and will likely evolve in their structure and scope if the SCA progresses.

Based on initial explorations and sense-making, the activators of any given SCA could consider:

- How might the goals, intervention context, and likely fields of action shape the requirements and design of the SCA's initial governance arrangements?
- Who should have a role and representation in governance? What will be culturally appropriate and functionally enabling for these groups?
- What aspects of regulation and legislation will likely need to be navigated during the inception phase? Are there any specialised capabilities that might be required?
- What structural and/or systemic inequities exist in the current context? How might these play out in the development of the approach?
- What could the design processes for the future governance arrangements look like? Who needs to be involved from the start?
- What comparable initiatives already exist that could provide insights into the approach, design, and evolution of governance arrangements?

Areas for engaged research and discovery:

- Governance design requirements, processes, and patterns for SCAs.

Exploring operations

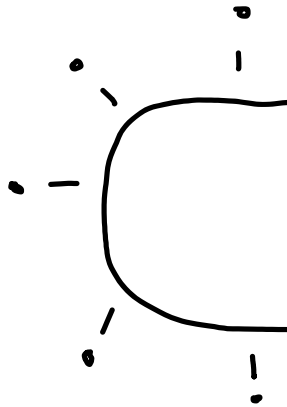
Any given SCA will require development and implementation capacity. This can be done in any number of ways.

Based on initial explorations and sense-making, the activators of any given SCA could consider:

- How might the goals, intervention context, and likely systems-level portfolios shape the design and structural requirements of the SCA's operations?
- What leadership, technical, and functional attributes are likely to be required to develop and implement the SCA? What will be required to raise, hold, allocate, and manage potential sources of capital?
- What knowledge, capabilities, and other competencies will be required to work within the intervention context, systems-level portfolios, and with key stakeholders?
- What might be an appropriate level of operational resourcing compared to the overall ambition of the SCA? How can operational costs be resourced appropriately and sustainably?
- How might development activities such as systems mapping, portfolio design, development of sensing mechanisms, etc. be undertaken? Who will be involved and who will lead them?
- What existing organisations and/or capacities in the intervention context could be built upon? What would they need to undertake new roles and responsibilities?
- What roles might partners play in the development and implementation of the SCA? How might partnering arrangements be progressed?
- How might operational functions interact with the initial thinking on governance arrangements?

Areas for engaged research and discovery:

- Developing a taxonomy of systems capital implementation models and approaches.
- Developing a leadership and capabilities framework for SCAs.



Exploring tech potential

A range of technologies offer the potential to assist information, coordination, and transactional flows within SCAs.

Based on initial explorations and sense-making, the activators of any given SCA could consider:

- What technologies are available to assist with information, coordination, and transaction flows within the intervention context?
- What technology platforms and infrastructures could enable and/or assist the sourcing of capital pools and/or flows? What would be involved in harnessing these technologies?
- Who can be engaged to provide advice and guidance on potential options and ensure the full range of possibilities can be explored?
- What relevant precedents and use cases exist and can be drawn upon? What transferable insights and learnings are available?
- How might technologies support or enable the creation of new incentives, business models, and value flows within the intervention context and across the likely fields of action?
- How might technologies support or enable new governance practices, ownership models, and distribution channels?
- What are the potential cost, capability, and design implications for employing different technologies?
- What risks, exclusions, and unintended consequences may the use of technologies create, and how might they be overcome?
- If new technologies are to be employed, how might they be tested and scaled in ways that are cost effective and mitigate risk?

Areas for engaged research and discovery:

- To what extent can novel governance and financing mechanisms be enabled by web3 technologies?

Assessing feasibility

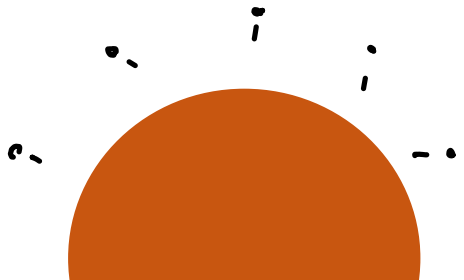
After these initial explorations, the activators of any given SCA should appraise the feasibility of being able to progress into a development phase.

Considerations may include:

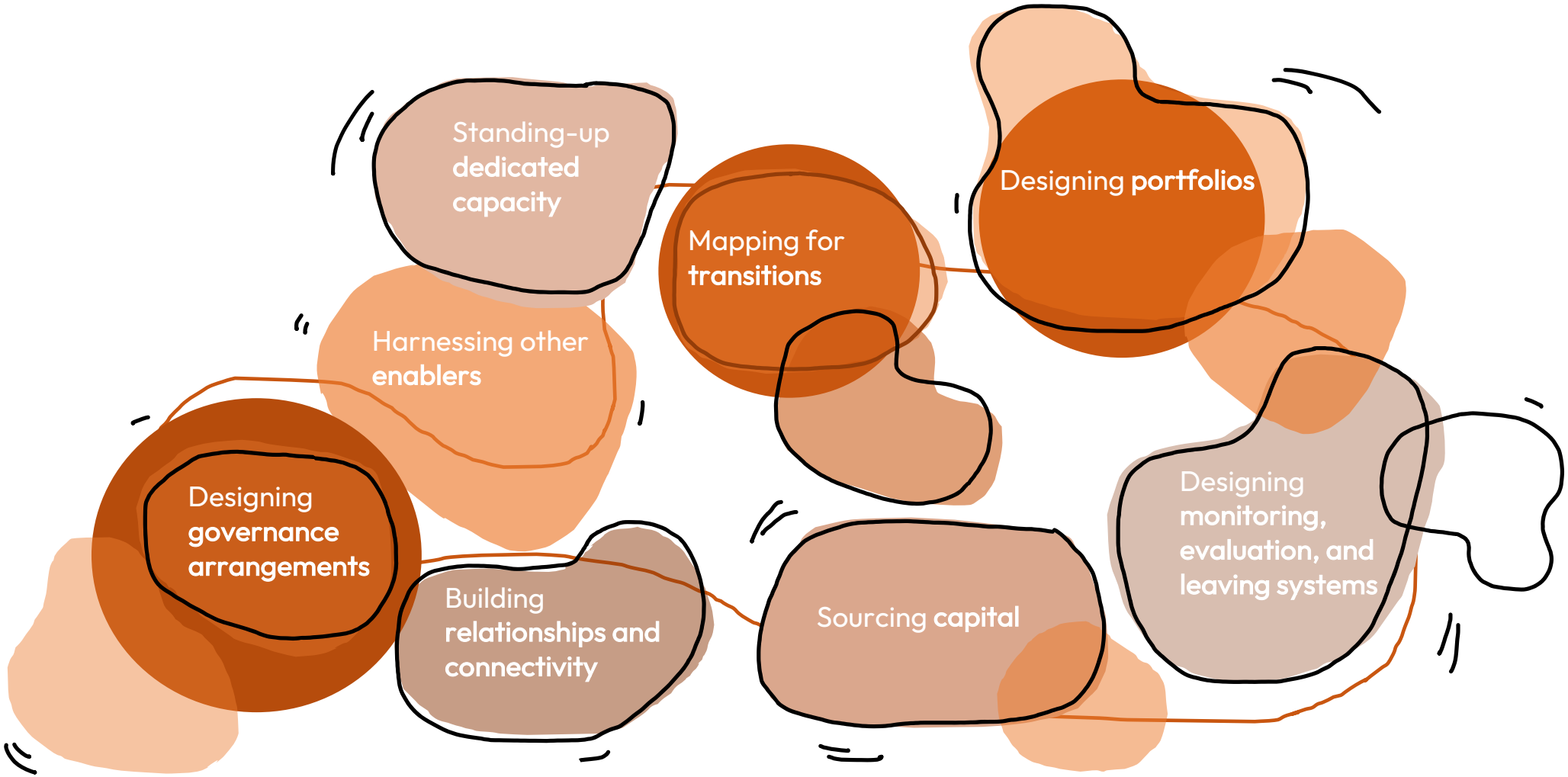
- On balance, does the intervention context indicate a readiness for change? Do the pressures, conditions, interests, and incentives around the likely systems-level portfolios feel sufficient to underpin the development of a SCA?
- Do the goals and potential outcomes show signs of being compelling enough to galvanise key stakeholders, facilitate a supply of capital, and mobilise action?
- Are there promising activities to build upon and potential actions available to form the foundations of an investment portfolio?
- Could sufficient and appropriate resources be sourced to meet the likely capital demands of an investment portfolio?
- Is there sufficient leadership, commitment, capacity, and resources to steward the development phase of the SCA?
- Is there a shared and credible pathway to progress the development phase of the SCA?

Areas for engaged research and discovery:

- How can appraisal frameworks and processes be developed to help assess the feasibility of SCAs?



3.4 **Developing** a Systems Capital Approach



Standing-up dedicated capacity

The development of a SCA will require some form of dedicated capacity to facilitate and/or lead design and implementation.

The structure and attributes of this dedicated capacity will be determined by context and function with consideration to:

- What resources are available?
- What are the governance and compliance requirements of potential capital sources?
- What is the continuing role of the SCA's Activators?
- What is the capacity and connectivity of actors around the likely fields of action?
- Who are the other key stakeholders in the intervention context and how will they need to be engaged?
- What interfaces may be required between operational and governance activities?
- What are the intended uses and roles of technology?

Depending on context, possible approaches to structuring the lead entity could include:

- A specialised systems capital intermediary.
- An existing entity or network in the intervention context that has the credibility and capacity to hold the role.
- A platform organisation held between key actors in the intervention context.
- A Decentralised Autonomous Organisation (DAO).

Relative to intervention context, likely fields of action, and the intended approach, key requirements of the portfolio lead will include:

- Mission alignment.
- Learning culture and other systems capital mindsets.
- Facilitative and adaptive leadership.
- Credibility and legitimacy.
- Appropriate capabilities.
- Sufficient capacity.
- Operational sustainability.

Areas for engaged research and discovery:

- Organisational design for SCAs and implications for incorporation.

Mapping for transitions

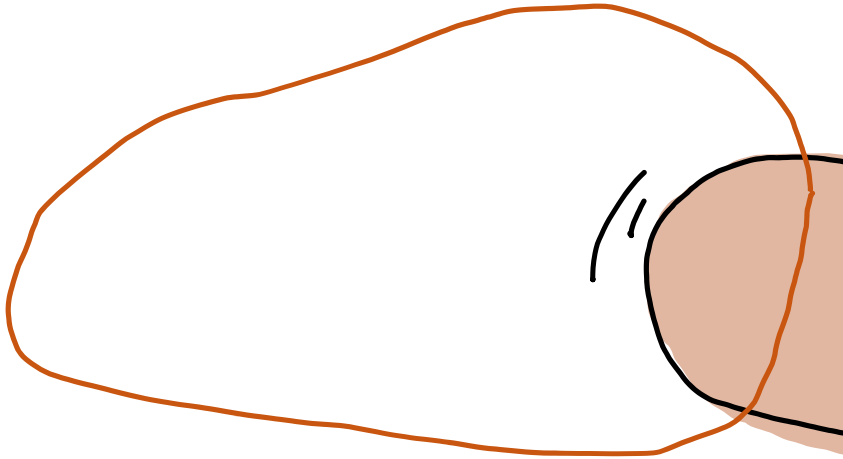
The development of a SCA is anchored by understanding existing and potential relationships in the intervention context. Growing this awareness will help shape the theory of change, determine the systems-level portfolios, and identify fields of action that can foster transitions towards directional goals.

These processes should consider:

- How can stakeholders be involved in sense-making processes and supported to better understand each other's perspectives, interests, needs, and explore how relationships may evolve between them?
- What are the key systems-level portfolios in the intervention context?
- What are the existing resource and value flows (and dependencies) between activities, assets, and infrastructures within and between these systems-level portfolios? Where do they break down or have potential to be grown and/or redirected?
- What formal and informal power structures exist in the intervention context? Where do key points of influence lie?
- What latent assets, strengths, and opportunities exist within the intervention context and around the likely fields of action?
- What vulnerabilities and dysfunctional patterns in the intervention context can be observed?
- What trends, opportunities, and constraints outside of the immediate context may have material impact on activities and developments within it?
- What fields of action and points of intervention exist across the key systems-level portfolios? How might these form the basis of an investment approach and portfolio(s)? How might these options be tested and further explored?
- Where might deeper sense-making, analysis, modelling, and testing be required to build confidence in the initial intervention approach?
- How might the landscape change and systems-level portfolios evolve? How might the investment approach be designed to be sensitive and resilient to these dynamics?
- How might initial mapping and sense-making inform the design of ongoing data capture, information flows, and sensing mechanisms?

Areas for engaged research and discovery:

- Further development of design methods and processes for sense-making and mapping transition pathways.



Designing portfolios

Designing investment approaches and portfolios builds on mapping and sense-making. The aim is to determine how resources can be allocated to activities and assets to stimulate, amplify, and sustain value flows and across key systems-level portfolios.

When designing portfolios, different types of relationships between activities, assets, and actors can be considered:

Mutually Reinforcing - do activities have the potential to mutually reinforce each other (e.g., regenerative agriculture and carbon farming through soil sequestration)?

Path Dependency - is investment in one activity required before another becomes viable (e.g., new renewable energy and retro-fitting enterprises creating demand for skills training in the industry)?

Efficiency - how might tools, resources, capabilities, etc. generated through one activity be made available to others (e.g., employee ownership structure open-sourced for other local enterprises)?

Extension - how might the success of one activity create new possibilities (e.g., activities that strengthen social capital create the condition for the development of a local makerspace)?

Adjacent Impact - how might the value created through one activity create other forms of value in indirect ways (e.g., greening and beautifying urban areas attracts more people and grows the local talent base)?

Complementary - how can learning from one activity add value to others? (e.g., development of smart tokens linked to wetland restoration provides insights on how to design 'tokenomic' models for a community currency)?

Other considerations for investment portfolio design may include:

- What's the **simplest** systems intervention that can be initiated through investment (Gall's Law)?
- Who are the actors that can be most relied upon to provide a solid foundation for the overall approach?
- Do some seemingly suboptimal fields of action require further exploration and testing to arrive at unexpected but potentially higher impact options?
- Could resources support the undertaking of a variety of activities / investment approaches? How might 'variations' be set-up as 'parallel experiments' to both accelerate learning and decrease dependence on any one approach (Horton, 2011)?
- What activities and assets within and across the systems-level portfolios have good potential to attract additional resources and investment?
- What will be most important and useful to learn from initial resource allocations?

Areas for engaged research and discovery:

- Design methods and processes for systems capital portfolios and development pathways.

Building relationships and connectivity

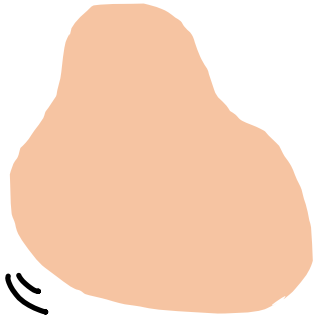
The efficacy of a SCA relies on synergies and value flows between activities, actors, and assets within and across systems-level portfolios. As a result, the relational infrastructure that supports and connects actors and stakeholders is a key element of the overall approach.

As the design of portfolios starts to take shape, lead actors should consider:

- What overarching values and principles will determine how relationships are established, enabled, and maintained?
- Who needs to be part of a 'guiding coalition' (Kotter, 2007)? Who are the key people needed to maintain coherence and momentum across the portfolio from the outset?
- What information will be valuable to make visible to actors across the systems-level portfolios and intervention context?
- What communication platforms, tools, and practices can support connectivity and information flows? Who will lead, coordinate, and support this relational infrastructure?
- Who are the natural connectors, facilitators, and nodes across the SCA and how might they be harnessed?
- Who in the intervention context would benefit from being connected to each other? How will this best be done based on who they are and how they work?
- What may be required to foster synergies between activities within and across the systems-level portfolios and those in resourced through the emergent investment portfolio?
- What ambiguous, cultural, or technically specific language is likely to be used across the SCA? How can communications mitigate potential misunderstanding, power imbalances, and information asymmetries?
- Are there metaphors and stories that could be used to help build understanding and coherence across the SCA?
- What sensing and feedback loops can be put in place to maintain coherence and constructive relationships between actors working on interconnected activities?
- How might the SCA facilitate self-organisation and empower actors and stakeholders to be involved in portfolio design and networked governance?
- What other roles could communications and engagement play in fostering spillovers (this might include education, public advocacy, multimedia publishing, etc.)?

Areas for engaged research and discovery:

- What principles and practices from decentralised networks, movement building, and community organising can contribute to the design and development of SCAs?



Sourcing capital

A SCA will need to source a pool and/or flows of capital consistent with the attributes outlined in Section 2.

Building on initial explorations and the emerging investment approach and portfolio design, lead actors could consider:

- What capital will likely be required to initiate the SCA?
- What context-based attributes, demands, and specifications will need to be met by the SCA's capital pool(s)?
- Who will lead capital sourcing and structuring? What are the likely resourcing and timing implications of this process?
- How will the intended investors and sources of capital affect how the SCA's investment vehicles are structured, incorporated, and governed?
- What other constraints may be imposed on the portfolio by the proposed investors and sources of capital? What implications could this have for investment approach and allocations?
- What technical capabilities and functionalities will likely be required by the SCA's investment vehicle(s)?
- Will any tailored investment mechanisms and/or instruments need to be developed? Could any enhance the SCA's investment approach and/or supply of capital? What precedents can inform and de-risk these novel approaches?
- What other forms of funding and finance might be leveraged to complement core resources?

Areas for engaged research and discovery:

- The development and testing of investment vehicles and tailored mechanisms for systems capital.

Designing monitoring, evaluation, and learning systems

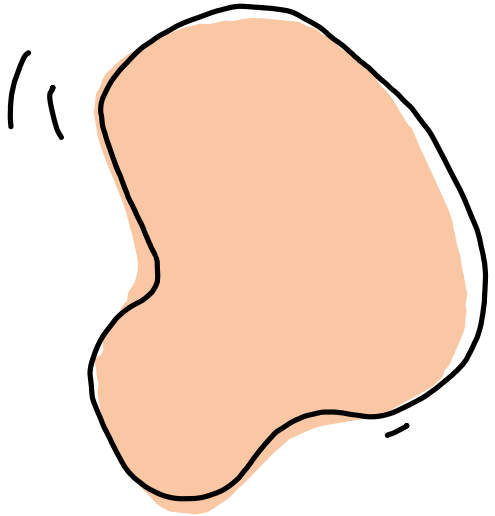
A SCA will benefit from considering how it harnesses data and information for a range of purposes - from conventional approaches to monitoring performance and impact, to the more nuanced sensing of signals and dynamics across the intervention context.

In designing monitoring, evaluation, and learning systems, lead actors could consider:

- What purposes could information usefully serve in the implementation of the SCA?
    - Monitoring change across the systems-level portfolios?
    - Tracking progress at an individual activity level?
    - Checking for integrity with stated SCA values and principles?
    - Monitoring relationships between key actors and activities?
    - Sensing wider dynamics and shifts across the intervention context?
    - Monitoring any wider effects on power structures, resources flows, behaviours, narratives, or policy, etc.?
- How might information flows support practice in different timelines, e.g., anticipating future shifts, adapting to real-time dynamics, accounting for progress made?
- What could be the appropriate methods, frameworks, and mechanisms to implement these objectives? What is feasible and what should be prioritised?
- How might data be combined with human-centred stories and other forms of knowing? What methods and processes are appropriate for gathering from these sources? What are the ethical considerations and safeguards?
- What learning practices, processes, and groups could be developed? Who will be involved in these and how will they be platformed?
- What information could be open-sourced? How might information flows fuel learning and innovation across the systems-level portfolios?
- How might the design of information flows and learning systems map on to governance arrangements?
- What technologies are available to platform and coordinate information flows and enhance learning systems?
- How might learning from the SCA contribute to the development of the wider field.

Areas for engaged research and discovery:

- Developing guidance for SCA monitoring, evaluation, and learning systems.



Designing governance arrangements

SCAs, like other systemic approaches to innovation, require a broader range of governance mindsets and modalities than a single organisation or entity. They will likely still require structured ways to hold authority and accountability, but they will also demand more dynamic arrangements to enable multi-actor cooperation and coherence.

In designing appropriate and enabling governance arrangements, lead actors could consider:

- What governance functions will likely be required by the SCA relative to the goals, context, capital arrangements, investment approach, systems-level portfolios, and actors? These could include:
  - Oversight of key operational functions or resources.
  - Enabling representation and decision-making at multiple levels.
  - Stewardship of shared values and principles.
  - Sense-making and determining directions.
  - Conflict resolution between interconnected but autonomous actors.
  - Stewardship of shared assets and interests (including data).
  - Managing, mitigating, and adapting to systems-level risks.
  - Fractal-level enablement and consistency - e.g., what happens in micro interactions has fidelity with macro level principles, practices, and goals.
  - Interfacing a plurality of perspectives and self-governing entities.
  - Distribution of rights, responsibilities, and value
- Based on the likely requirements, what different forums, groups, and mechanisms might be needed to hold these respective functions? How might the functions be clustered?
- Who might need to be involved in these various governance forums / spaces and on what basis? What tools and mechanisms might they require to work well?
- What information requirements might the different spaces require? How might these requirements join-up to operational activities and monitoring mechanisms?
- If there are multiple governance forums / spaces, how might they interact fluidly and constructively?
- What might the various incorporation and legal requirements be? What other obligations might need to be considered and upheld?
- What technologies can support these information and coordination requirements?
- If web3 technologies/tokens are employed for governance functions, how might they also be woven into value flows, exchange, and distribution arrangements?

Areas for engaged research and discovery:

- Benefits and trade-offs of decentralised governance arrangements.
- Determining the core / common functionality requirements of SCAs.

Harnessing other enablers

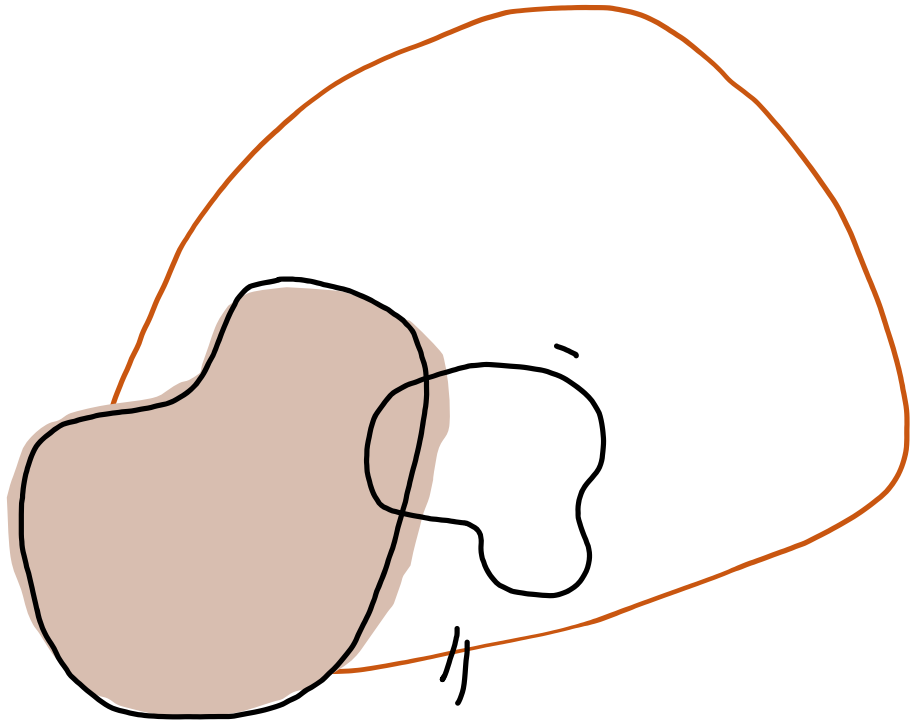
SCAs have the potential to draw on and catalyse a wider range of enablers and resources that already exist or are latent in the intervention context.

When developing a SCA, lead actors could consider:

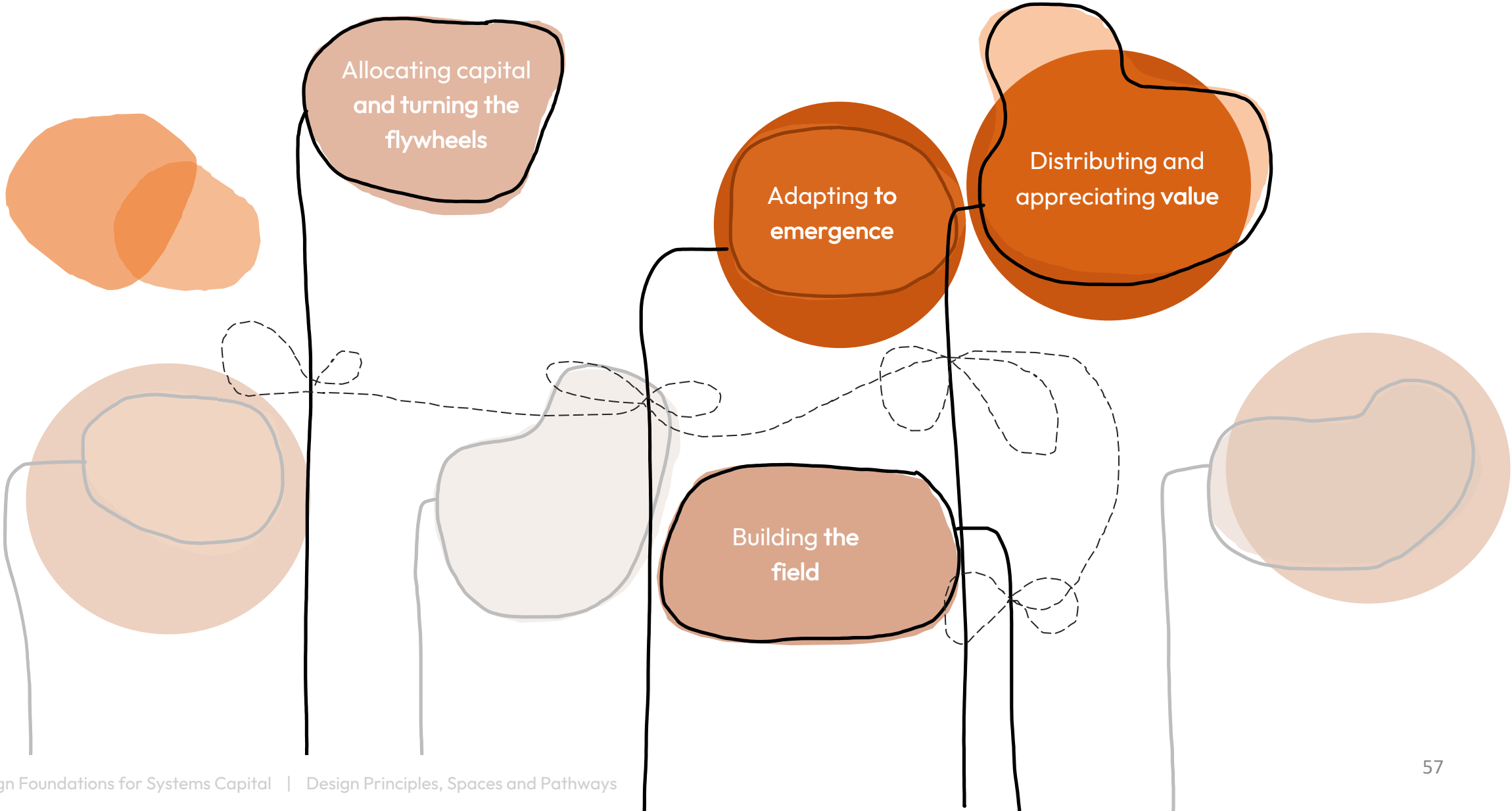
- What existing activities, programs, investments, and intermediaries are in play across in the intervention context that are relevant to the intended systems-level portfolios?
- How might these interact with and enhance the SCA?
- What possibilities exist to shape related government policies?
- How might public and private procurement guidelines be influenced to create enabling markets and incentives within and across the systems-level portfolios?
- Are there latent assets that can be activated and/or repurposed to support actors and activities within and across the systems-level portfolios?
- Who needs to be informed and influenced to unlock wider resources and/or enablers? What forms of evidence and engagement might be most effective in moving them action?
- Might novel market mechanisms be incorporated or created to better account for the social, cultural, environmental and intellectual value being generated within and across portfolios?
- What wider stakeholders have an interest in the generation and accounting of these forms of value?

Areas for engaged research and discovery:

- Mapping enabling environments and levers for SCAs.



3.5 **Implementing** a Systems Capital Approach



Allocating capital **and turning flywheels**

When the infrastructures, capital, and portfolio design (or investment approach) for a SCA are in place, resource allocation can begin.

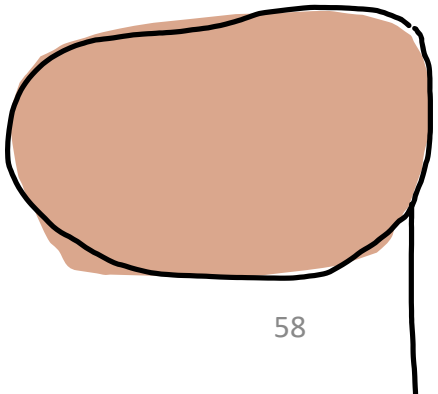
Any given investment portfolio will include resource allocations to a mix of activities, assets, and enablers that collectively stimulate, amplify, and sustain value flows within and across systems-levels portfolios towards transition goals.

Building on all contextual considerations, explorations, and principles, the actors leading the investment approach could consider:

- Where is the simplest and highest potential to start? What needs to be tested and learned before making further investments?
- How will the SCA's agreed values and principles determine how investments are assessed, negotiated, structured, and managed?
- How will power relations in investment processes be made explicit and how can engagements be sensitive to demand-side demands, culture, and interests?
- How can resource allocation be cost effective and non-extractive for demand-side actors? How might any given investment be structured around shared goals, principles, and processes?
- How might multipliers, spill-overs, and indirect values flows resulting from any allocation be anticipated and accounted for?
- How can the breadth of available investment approaches and instruments be maximised and feasibly managed within the investment portfolio?
- How might this include enabling approaches such as providing guarantees, liquidating interests in stranded assets, and/or creating localised market-based mechanisms (such as tailored outcomes-based payments) to unlock value flows?
- How can return profiles, contractual terms, and investment structures be made flexible and enabling for activities that are key 'multiplying interventions points' (MIPs) within and across systems-level portfolios?
- How can activity-level monitoring and measurement frameworks be designed to enable ownership and learning? How can reporting and communication across the investment portfolio reflect the cultural contexts of demand-side actors and activities?
- How might capability building and other supports be connected to and/or wrapped around actors and activities receiving investment?
- How might investments be designed and deployed in ways that generate wider connectivity and social capital within and across systems-level portfolios?
- How will ongoing engagement with resourced activities and actors work? How will the goals and interests of the SCA be upheld and balanced with the autonomy of the invested parties?
- How can other investors and sources of capital be crowded-in to back specific actors, activities, and assets that align with both their own individual interests and the SCA's ethos and goals?

Areas for engaged research and discovery:

- Developing guidance for systems capital investment approaches and practices (e.g., like the Equality Impact Investing Toolkit).



Adapting to emergence

After the investment portfolio is initiated, changes within and across the system-level portfolios will be emergent.

As a result, SCA management and governance approaches will need to be sensitive to the nature of change and adaptive to it. While the directional goals and the intervention context are likely to remain stable, the intervention and portfolio approach will likely be dynamic.

Building on underpinning principles and mindsets, the actors leading and stewarding the SCA could consider:

- What does it mean to frame investments as experiments? What is being tested and learned at any given time?
- How is learning across the portfolios supported and managed in practice? What are the methods, mechanisms, practices, and processes that are embedded into operational and governance activities?
- How will observation of emergent patterns, behaviours, and dynamics inform the management of investments, portfolio design, and new allocations?
- How can individualised monitoring and reporting arrangements at the activity-level be integrated into systems-level coherence and aggregated management and governance arrangements?
- How can resource buffers and follow-on funds be set aside to enable resilience and adaptive management within an investment portfolio?
- How might novel means of sourcing new activities and potential investments be brought into play? How might actors be enabled to organise around shared opportunities and incentivised to innovate?
- As momentum across portfolios builds, how can new actors, activities, and possibilities (that weren't available at the time of initial design) be knitted together with existing to harness synergies and grow network effects?
- How can constant maintenance and evolution of management and governance infrastructure arrangements be resourced and actioned?
- How can sensing, monitoring, evaluation, and learning systems also be calibrated and evolved as investments are made and activities are implemented?
- What practices might help surface emergent properties which aren't obvious? How might unintended consequences be noticed and interpreted?
- How can the SCA be sensitive to self-organisation that emerges within and across systems-level portfolios and pull back interventions where appropriate?
- How are the SCA leads changing, themselves, as a result of engaging in this work? How is this affecting their outlook and aspirations?
- Being prepared to reset fundamental aspects of the approach if it proves to be flawed and/or emergent dynamics render initial goals and assumptions redundant.

Areas for engaged research and discovery

- Developing guidance for systems capital adaptive management and governance approaches and practices.

Distributing and appreciating value

How value is returned to investors and other sources of capital will be highly contextual and dependent on the arrangements and agreements in place to resource any given SCA.

Beyond these specific arrangements, there are opportunities to distribute and recycle value generated through the investment portfolio to increase the resilience within and across the systems-level portfolios and appreciate the assets that underpin them.

Actors leading and stewarding a SCA could consider:

- How might actors, activities, and assets that contribute to revenue generated by other parties be recognised for their contribution?
- How might models and mechanisms for 'commons dividends' be established to enable fair distributions and increase resilience and velocity of value flows within and across systems-level portfolios?
- Exploring notions of 'commons treasuries' that hold assets on behalf of actors within and across the systems-level portfolios, and which also interface with novel market mechanisms that have been employed to enable and incentivise blended value flows. This could include purchasing carbon or biodiversity credits to stimulate activities within the intervention context and then holding them as assets that may appreciate over time and offer the potential to generate new resources for other portfolio activities.
- What is the potential for smart contracts in the design and application of these approaches (e.g., see Celo)?
- How might smart contracts also enable direct distributions to stakeholders resulting from activities and assets within and across systems-level portfolios (e.g., dividends from a community energy company or a land regeneration trust)?
- How might communities equipped with crypto wallets (to receive dividends through smart contracts) also be enabled to participate in distributed / networked governance?
- How can the goals for transformation underpin the ethos and treatment of any potential surpluses and be reinvested to contribute to the long-term resilience and sustainability of transitions that have been achieved?
- What does biodegradability and/or an exit look like for any external actors supporting the resourcing and implementation of a SCA? How will responsibilities and resources be retracted and/or transferred over time?

Areas for engaged research and discovery:

- Exploring models and mechanisms for the commoning of dividends and assets.

Building the field

Systemic approaches to innovation are proliferating around the world and evolving quickly in terms of how they work and are resourced.

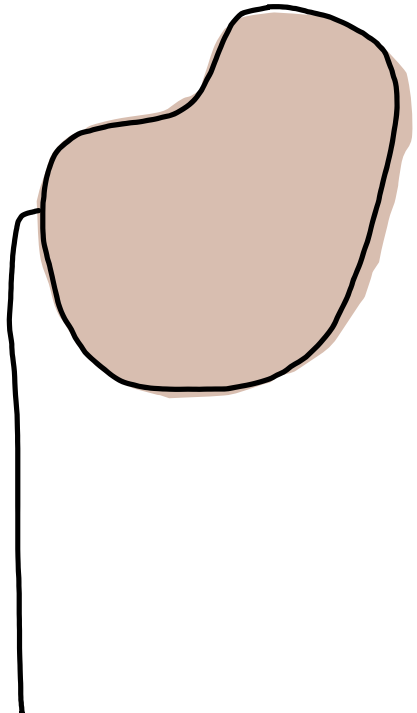
Beyond learning within any given SCA or comparable investment activities, how can experimentation with these novel approaches and practices be better connected to each other and contribute to the development of the field?

Actors leading and stewarding a SCA could consider:

- How might they find, connect, and engage with comparable initiatives or communities of practice?
- What and how can they learn from existing precedents and initiatives?
- How might insights and knowledge generated through their own monitoring, evaluation, and learning activities be disseminated more widely for different audiences and uses?
- How might partnerships be developed with research-based organisations, institutions, and networks to support the undertaking of these activities?

Areas for engaged research and discovery:

- Establishment of holistic and well-resourced research agendas within universities and/or other public institutions to better understand and contribute to the development of systems innovation knowledge, capability, and practice.



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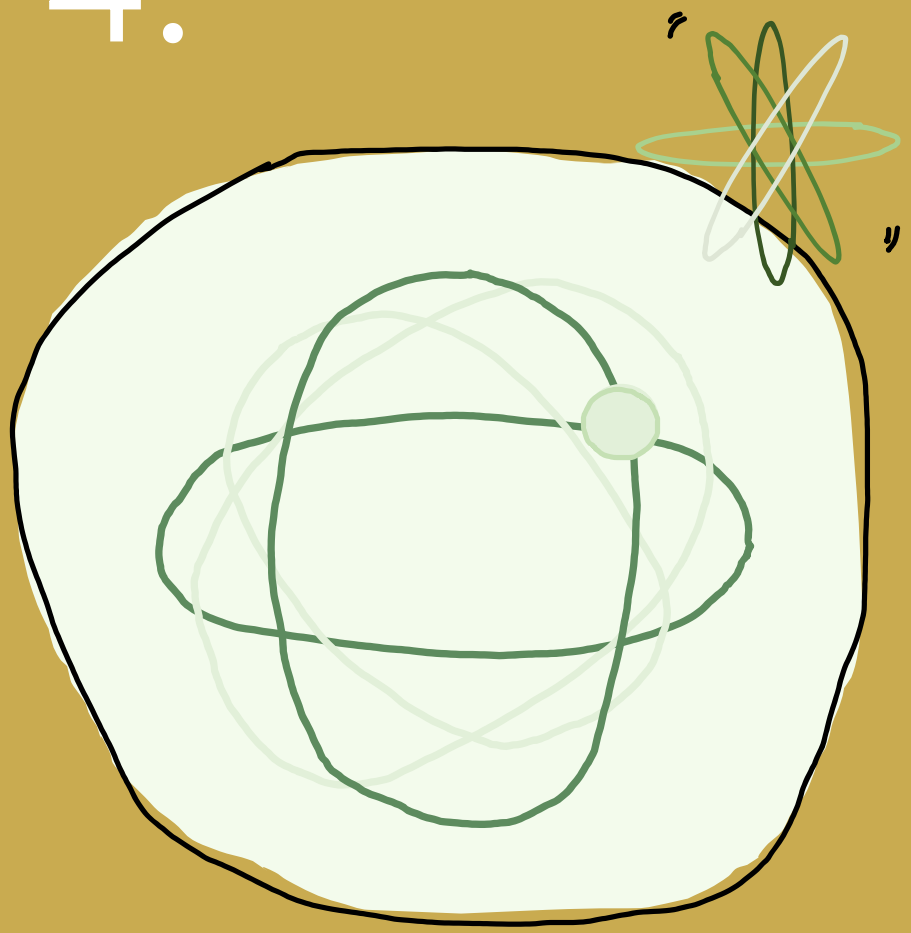


Where next?

In this chapter,

4.1 Partnerships & experiments

Having articulated our initial thinking and design hypothesis for systems capital, we invite discussion, challenge, and co-creation to improve it.

Our focus now is to test and evolve this work through practice. While we are currently exploring potential demonstration projects, we are more attracted to forming partnerships with others who are engaged in activities that might either evolve into systems capital approaches or provide a context to test discrete aspects of this thinking - this could include any of the areas for engaged research and discovery proposed in the design spaces.

The aim of any of these demonstration activities will be twofold:

1) to contribute to real world innovation and change; and
2) to create learning that can be widely distributed and contribute to the further development of systems capital thinking and practice.

Please contact us if you are engaged in activities which you think could incorporate aspects of the approaches we've outlined or are interested in (and have the capacity to) prototype a systems capital approach from first principles.

We believe that promising contexts for experimentation include:

- Networks operating towards purpose-led goals and/or across value systems (e.g., an impact enterprise network, potentially organised around a specific system, e.g., food)
- Innovators with intentions to foster systems change and/or create novel value chains for purpose-led goals (e.g., creating the conditions and incentives for farmers to transition to regenerative agriculture)
- Institutions with intentions to foster system transitions in a place or region (e.g., renewable energy transitions or an urban regeneration initiative anchored in the development of new property assets)
- Innovators and organisations seeking to foster community capital through new modes of engagement, empowerment, and enablement (e.g., civic innovation design platform complemented by a localised digital currency and participatory governance)

We would also like to engage with public, private, and philanthropic sector investors and funders who are interested in systems capital approaches and are open to further discovery, exploring the design of novel investment approaches and vehicles, and/or the active support of prototyping and demonstration activities.

4.2 End note

At the Asia Pacific Impact Investment Summit held earlier this year (Sydney, March 2022), there was much talk about the need for systems change. Discussion around what would be done differently to bring about this change was less evident.

This provocation on the potential of systems capital is speculative, but our primary intent is to offer ideas that help shift this inertia.

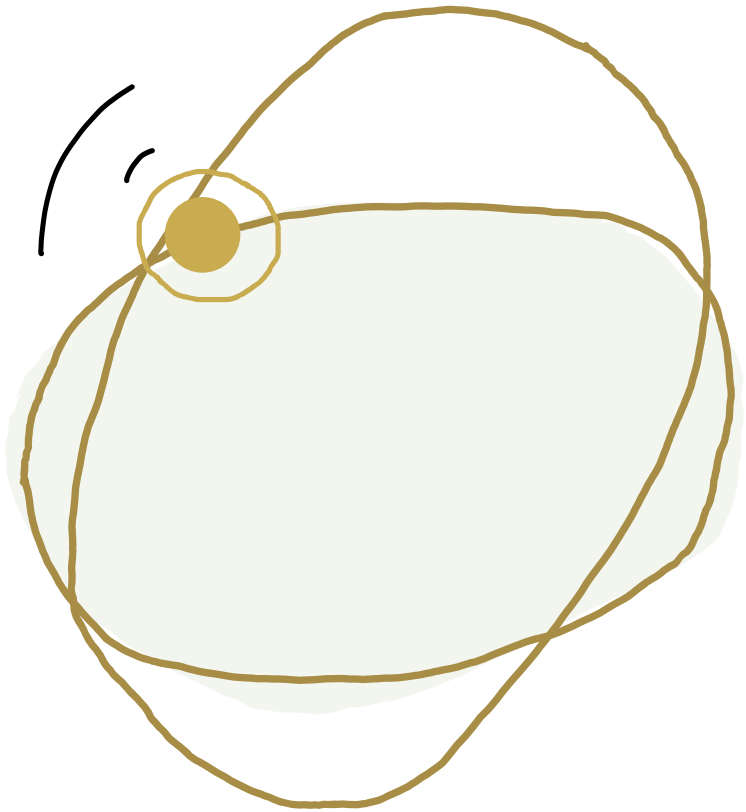
A final reading of what we propose can be summarised as a manifesto for the commoning of capital for the pursuit of common interests. We see these approaches as additional to what already works well, while also recognising the need for much experimentation and iteration.

We are also calling out an inherent constraint in most impact finance. That is, while public good may be pursued with genuine intent, the nature of outcomes is largely determined by and tied to specific interests. This presents an impediment to enabling systems transformation because it defies the complex, interconnected nature of things and fragments the work that needs to be done.

Realising the SDGs demands reimagining what is possible. We need to push hard against the paradigms we inhabit and our assumptions about capital, property, investment, production, value, impact, **and interconnectedness**.

Regardless of how we get there, real change will require vast resources that can be flexibly deployed to enable coherent, collective effort, and the dedicated, shared pursuit of bold, holistic goals.

Systems change will require evolving our current systems, **and ourselves**.



About us

Griffith UNIVERSITY
Queensland, Australia
Yunus Centre

The Yunus Centre's purpose is to accelerate transitions to regenerative and distributive futures through systems innovation.

We believe that experimentation is central to achieving this goal and is needed in all sectors, contexts and places. We undertake our work through learning and teaching, engaged research and discovery, and direct support for systems innovation and change.

From academia and public service, to social enterprise start-ups and global corporations our team brings diverse experience and ways of working. We celebrate our different perspectives and are united by our desire for fairness and justice and to contribute to improved outcomes for people, place and our planet. We want to be pathfinders for a better world.

The Yunus Centre is part of Griffith Business School and based at the Logan Campus.

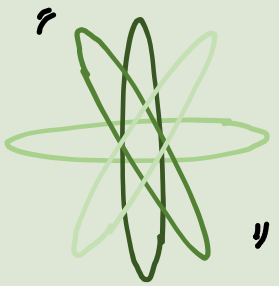
HATCHED
Certified B Corporation

Hatched is a strategic design agency committed to enabling a transition towards sustainability and a more equitable future. We support impact-driven leaders with a collaborative, design-led approach to solve some of our biggest challenges.

Hatched facilitates values and strengths-based impact strategies, building purpose-driven and evidence-based frameworks that create strategic clarity, and help leaders genuinely make a difference and share their story with meaningful outcomes-based metrics.

Hatched is action-focused and celebrates 'doing' through their very own impact initiatives, such as mitigating climate change via The Carbon Bank and launching an outcomes-based impact measurement tool, Rooy.

Hatched is a Certified B Corp and is proud to sit with a cohort of businesses who place value on 'doing good', and who meet a rigorous criteria of ethical practice across their business metrics.



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Griffith UNIVERSITY
Queensland, Australia
Yunus Centre

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